Los Angeles PIERCE COLLEGE

6201 Winnetka Avenue
Woodland Hills, CA 91371

For FasterService Find the Proper Office Listed Alphabetically Below

FOR OFFICES NOT LISTED CALL CAMPUS OPERATOR . . . . . (818)347-0551/(805)495-0050

All numbers listed below are (818) area code

ADMINISTRATIVE AND CAMPUS SERVICES

Admissions 719-6404
Assessment Center 719-6499
Associated Students 719-6411
Athletic Director 719-6421
Bookstore Information 347-0313
Building & Grounds 719-6441
Bull, The 719-6427
Business Office Information . 710-0497
Career Center 719-6436
Child Development Center . . 719-6494
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Counseling 719-6440
EOP&S 719-6422
Financial Aid 719-6428
Foreign Student Advisor . . . 719-6417
GAIN 719-6400
Graduation 719-6416
Handicapped Services Office . 719-6430
Health Center . . . . . Ext. 270
Interpreter Services for Deaf . 719-6430
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Victoria S. Romero, Publication Coordinator

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LOS ANGELES

PIERCE COLLEGE

A COMMUNITY COLLEGE IN THE SAN FERNANDO VALLEY

ONE OF NINE LOS ANGELES COMMUNITY COLLEGES

1994-95 CATALOG

VOLUME 48

6201 WINNETKA AVENUE
WOODLAND HILLS, CALIFORNIA 91371

Pierce College is a tax-supported educational institution which offers post-high school opportunities for men and women and is administered by the Los Angeles Community College District.

Accredited by the Western Association of Schools and Colleges.

LOS ANGELES COMMUNITY COLLEGE DISTRICT

617 West Seventh Street
Los Angeles, California 90017
(213) 891-2000

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Nondiscrimination Policy

All programs and activities of the Los Angeles Community College District shall be operated in a manner which is free of discrimination on the basis of race, color, national origin, ancestry, religion, creed, sex, pregnancy, marital status, medical condition (cancer related), sexual orientation, age, disability, or veterans status (Reference: Board Rule 1202).

Regla de No Discriminación

Todos los programas y actividades de Los Angeles Community College District se implementarán de manera que sea libre de discriminación a base de raza, color, nacionalidad, antepasados, religión, credo, sexo, embarazo, estado civil, condicion medica, orentación sexual, edad, incapacidad o si es o ne es veterano (Referencia: Regla 1202 de la Junta).

Equal Opportunity Policy Compliance Procedure

In order to insure Equal Opportunity Policy Compliance at Los Angeles Pierce College, please direct inquiries to the Affirmative Action Officer, Carlos Martinez, Dean, Academic Affairs, 719-6451 or to Norm Crozer, Director, Section 504 Disabled Student Programs and Services, 719-6430.

In addition, inquiries may be directed to the District Office of Affirmative Action at (213) 891-2000, ext. 2315.

Polftica de Acuerdo con los Procedimientos de Igualdad de Oportunidades

Para poder asegurar igualdad de oportunidades en Los Angeles Pierce College, por favor dirija sus preguntas a las siguientes personas: Carlos Martinez, Décano, Asuntos Académicos, 719-6451 o Norm Crozer, Director del programa de personas incapacitadas, 719- 6453.

Además, puede dirigir sus preguntas a la oficina del Distrito de Acción afirmativa, teléfono (213) 891-2000, ext. 2315.

A MESSAGE FROM THE PRESIDENT

On behalf of the Pierce College faculty and staff, I would like to welcome you and invite you to take advantage of the many high-quality, low-cost educational opportunities available to you at Pierce.

Since 1947, Pierce College has earned a positive reputation as an educational leader in our community. Pierce's highly successful transfer programs have made the college a statewide model for transferring students to public and private universities. In addition, our varied curriculum features a wide range of courses and programs in occupational areas designed to help students learn the skills necessary for today's highpaying, technical careers.

All of us at Pierce are dedicated to assisting you and helping make your experience at Pierce a valued and productive educational and personal experience.

Sincerely,

Mary E. Lee, Ph.D.
President

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ACCURACY STATEMENT

The Los Angeles Community College District and Los Angeles Pierce College have made every effort to make this catalog accurate and may, without notice, change general information, courses, or programs offered. The reasons for change may include student enrollment, level of funding, or other issues decided by the district or college. The district and college also reserve the right to add to, change, or cancel any rules, regulations, policies and procedures as provided by law.

GENERAL INFORMATION

COLLEGE INFORMATION

History of the College

Los Angeles Pierce College has been a landmark in the West San Fernando Valley for 40 years. In December 1943, 392 acres of land set in rolling hills was purchased to establish the Clarence W. Pierce School of Agriculture named after the Los Angeles City Board of Education member instrumental in forming the new college over the objections of many who thought the West Valley too rural to support a learning institution.

The first classes at Pierce, which were designed to provide technical and practical agricultural training, began in the fall of 1947 under bare light bulbs in makeshift classrooms created from quonset huts salvaged from World War II. The College's first students, 211 World War II veterans (77 full-time and 135 part-time male students) enrolled in 46 courses and weathered the sun, the winds, power failures, floods, and mud.

Community pressures and demands soon caused the College to broaden its educational scope and also to admit women in February 1951. In the summer of 1956, by official action of the Board of Education, the College name was changed to Los Angeles Pierce College. Under this new name, the College continues as one of nine colleges in the Los Angeles Community College District.

As the College has built permanent classrooms, laboratories, and athletic facilities, the surrounding land has also developed. Now Warner Ranch, the last remaining farmland to the west, has been replaced by a well-planned business park and shopping centers.

Today the College serves a highly literate population, preparing students to take their place or to retrain in aerospace and other industries at the forefront of technological advances. The College remains unique to the greater Los Angeles area because of its farm and its instructional program in agriculture, natural resources management, animal health technology, and related fields, but may be best characterized by its broad range of instructional programs. Students may also choose to pursue a program in liberal arts and sciences and then transfer to a four-year college or university, or they may select from 50 occupational fields including computer technology, journalism, nursing and allied health, office administration, welding, numerical control, and quality assurance.

Complementing the instructional programs are community services workshops for adults and children on topics of the day.

College Campus

Pierce College is located on 427 acres in the western San Fernando Valley. Founded in 1947 as an agricultural college, large sections of tillable and range land have been preserved as an enclave within a suburban environment. The College maintains herds of cattle, sheep, and swine, as well as orchards of citrus and other deciduous trees. Part of the College land, Canyon de Lana, located in the northern end of the Chalk Hills, has been set aside as a nature preserve. This area of campus also serves as a feeding ground for large flocks of Canada geese during the winter months.

Besides classrooms and laboratories, the College maintains many special facilities to supplement its educational and extracurricular programs. Athletic facilities include a stadium, baseball field, tennis courts, swimming pool, and an equestrian arena. The College is also proud of its library, Learning Center, writing and math labs, Career Center, Campus Center, cafeteria, bookstore, and Performing Arts Building. Most college facilities are available to students with physical handicaps.

The College Colors and Mascot

The College colors, selected by the students of Pierce College in 1947, are scarlet and white. The College mascot is a Brahma Bull, and the students of Pierce College are known as Brahmas.

Regular Program

The regular program consists of two semesters, generally 20 weeks in length. Classes are scheduled from 7 a.m. to 10 p.m. There are some Saturday offerings. All college classes are open to regularly enrolled students.

Courses in the late afternoon and evening are designed to meet community needs for specialized vocational and general education courses, as well as courses which transfer to four-year colleges and universities. These classes are taught by the regular college faculty augmented by experienced instructors from all the instructional disciplines.

Summer Session

Summer Session will be offered subject to approval by the Board of Trustees.

Library

The Pierce College Library contains a collection of over 100,000 volumes, including books and materials required for supplementary study, and a representative collection of recreational reading material. The Library subscribes to over 400 periodicals and newspapers, and has an extensive microfilm and microfiche collection. The card catalog, current indexes, and INFOTRAC help locate information to be found in books, magazines, and pamphlets. Professional librarians are always available to assist Library patrons.

The Library is centrally located on the main campus mall. The building was completed in 1961 with facilities augmented in 1979. The addition brought stack capacity for books up to 120,000, provided for an enlarged and improved periodicals room, increased seating capacity by 200 stations, and offered students other conveniences such as group study areas and a typing room. A brochure is available to help students get acquainted with Library resources. Those who want to learn more about library techniques and research methods may be interested in a self-paced one-unit course offered by the Library. Further information is available in the Library.

EDUCATIONAL PHILOSOPHY

The Los Angeles Community Colleges affirm the principle that individuals should have opportunities to develop to their full potential. To that end, our main responsibility is to students and to the provision of education which benefits students and enables them to contribute to society.

Our colleges, therefore, should be accessible to all individuals who have the capacity and motivation to profit from higher education. Curricula and services of our colleges should provide means for fulfilling the promise of open access. We recognize the necessity to adapt to the changing educational needs of the Los Angeles Community Colleges' communities and to the growing diversity among our students. The quality of the educational experience is to be judged by its value to students and the community, not merely by quantitative measures. We further recognize that academic freedom is essential to excellence in education.

The mission of the Los Angeles Community Colleges is to provide comprehensive lower-division general education, occupational education, transfer education, transitional education, counseling and guidance, community services, and continuing education programs which are appropriate to the communities served and which meet the changing needs of students for academic and occupational preparation, citizenship, and cultural understanding.

In pursuit of this mission, we endeavor to:

- promote equal opportunity for participation;
- maintain appropriate standards for academic achievement;
- provide an educational environment which meets the needs of students with varied learning skills;
- provide support services which contribute to instructional effectiveness and student success;
- affirm the importance of multi-cultural, international, and inter-cultural collegiate experiences that foster individual and group understanding;
- manage effectively educational and financial resources.

FUNCTIONS OF THE COMMUNITY COLLEGES

To accomplish the educational philosophy and mission of the Los Angeles Community Colleges, Los Angeles Pierce College offers the following types of educational programs.

Transfer. A college transfer program which enables the student who completes two years of study to continue into upper division work at accredited four-year colleges and universities through careful and continuous articulation with accredited collegiate institutions and high schools.

Occupational. An occupational education program planned to offer the student basic business, technical, and professional curricula to develop skills which can lead to employment, job advancement, certification, or the associate degree.

General Education. A program of general education comprised of associate degree programs and other planned experiences which develop knowledge, skills, and attitudes necessary for the student to be effective as a person, a member, a worker, and a citizen, thereby enhancing the quality of life for the individual and for the society at large.

Transitional Education. A program of remedial and basic skills education for students needing preparation for community college level courses and programs; and English as a Second Language instruction for immigrants, foreign students and other students with limited English proficiency.

Counseling and Guidance. A counseling and guidance program incorporating academic, career, and personal counseling and assistance in matters of admissions, financial aid, job placement and student activities; to assist the student in the establishment of educational goals and in the selection and pursuit of a life work compatible with his or her interests, aptitudes, and abilities.

Continuing Education. A program of continuing education comprised of graded and ungraded classes to provide opportunities for personal and occupational competence that supplement formal full-time college attendance.

Community Services. A program of community services offered to meet the needs of the community for vocational and recreational courses, community and cultural events, and civic functions, completely financed by fees charged those in attendance.

Joint Programs. Joint programs with business, industry, labor, education, government and other institutions which are of mutual benefit to sponsoring institutions, enhance the educational opportunities of program participants, and advance the mission and functions of the District.

College Goals

Below are listed the various aspects of campus life that Pierce College believes to be important, and our aspirations with regard to each.

CAMPUS: To preserve the central campus bordered by Winnetka, Victory, De Soto, and Oxnard for the support of existing and future college programs.

COLLEGIALITY: To nurture a feeling of belonging, involvement, and sharing in the process necessary to reach college goals and personal fulfillment.

COMMUNICATION: To improve the communication network to enhance understanding, participation, and decision making.

COMMUNITY INVOLVEMENT: To work with the community as educator, as provider of services, as neighbor, and as a partner in community development.

CULTURAL CENTER: To further develop the variety of high visibility performing and visual arts while integrating our activities with the cultural development of the West San Fernando Valley.

DECISION MAKING: To develop and implement a plan to distribute and decentralize decision making to its most effective level.

ENVIRONMENT: To improve the appearance, safety, comfort, and cleanliness of the campus, while preserving the rural atmosphere.

EQUIPMENT: To develop and implement a coordinated plan to acquire state-of-the-art equipment through fund raising, VEA, grant proposals, industrial liaisons, and nontraditional sources.

FACILITIES: To maintain a facilities plan to meet the needs of the College.

MANAGEMENT: To develop and implement a strategic management plan to be used in program evaluation and resource allocation.

MARKETING: To attract the community to the many opportunities and quality programs of the College.

OCCUPATIONAL EDUCATION: To provide up-to-date and comprehensive occupational programs so that students can become valued employees.

STAFFING: To maintain a functional level of staffing in academic programs and support services in accordance with affirmative action principles.

STUDENT CAMPUS LIFE: To encourage students and student organizations to assume academic, social, cultural, and recreational responsibilities.

TRANSFER EDUCATION: To maintain a transfer education program from which students can transfer to a university with full academic parity.

Advisory Committees

Advisory Committees lend assistance to the College in the development of occupational programs that will prepare students for useful and productive lives. The committee members make known the occupational needs as they pertain to employable skills in the specific occupation and in the geographic area of the College, and report on changing technology as it might affect the College programs.

Advisory Committees are extremely important in the development of a two-way system of understanding and communication and for the partnerships that are necessary between the College and the community.

Affirmative Action

The policy of the Los Angeles Community College District is to implement affirmatively equal opportunity to all qualified employees and applicants for employment without regard to race, color, national origin, ancestry, religion, creed, sex, pregnancy, age, disability, marital status, medical condition (cancer related), sexual orientation, or veteran status. Positive action will be taken to ensure that this policy is followed in all personnel practices, including recruitment, hiring, placement, upgrading, transfer, demotion, treatment during employment, rate of pay or other forms of compensation, selection for training, layoff, or termination. A vigorous Affirmative Action Program will be maintained to ensure appropriate utilization of certain protected groups in specific areas and levels within the district workforce through the implementation of specific result-oriented procedures and activities (Board Rule 101301).

Inquiries regarding Affirmative Action at Los Angeles Pierce College should be directed to the College Affirmative Action Officer, Carlos Martinez, Dean of Academic Affairs.

Sexual Harassment Policy

It is the policy of the Los Angeles Community College District to provide an educational, employment and business environment free of unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct or communications constituting sexual harassment, as defined and otherwise prohibited by state and federal statutes.

It shall be a violation of this policy for anyone who is authorized to recommend or take personnel or academic actions affecting an employee or student, or who is otherwise authorized to transact business or perform other acts or services on behalf of the Los Angeles Community College District, to engage in sexual harassment.

Within the educational environment, sexual harassment is prohibited between students, between employees and students, and between non-students and students. Within the work environment, sexual harassment is prohibited between supervisors and employees, between employees, and between nonemployees and employees. Direct inquiries to Carlos Martinez, Dean, Academic Affairs, 719-6451.

Limited English Proficiency

Occupational education classes are open to all students. Although the lack of proficiency in English is no barrier to enrollment in occupational education courses, it is suggested that students deficient in English utilize the services of the College that are provided for persons who are limited in English proficiency.

Conocimiento Limitado De Ingles

Las clases de educación de trabajo u ocupació están abiertas para todos los estudiantes. Aunque al falta de conocimiento del idioma ingés no es una barrera para poder matricularse en los cursos de educación de trabajo, se sugiere que los estudiantes que tengan deficiencia en el conocimiento del inglés, utilicen los servicios que ofrece el colegio para las personas con un limitado conocimiento de esta lengua.

INSTRUCTIONAL ALTERNATIVES

Honors Program

The Pierce College Honors Program is designed for serious, motivated students. The program offers approximately 14 academically enriched general education courses each semester. These courses are challenging and enhance the academic skills necessary for successful transfer. For further information see the current Schedule of Classes or call (818) 719-6455.

Eligibility

There are two basic eligibility requirements: grade point average and college-level writing ability. High school graduates need a 3.0 cumulative g.p.a., and Pierce students need a 3.25 g.p.a. in all course work including 12 or more UC-transferable units. All students must qualify for College English (English 101) either by scores on the ENGLISH PLACEMENT TEST or by passing prerequisite courses.

Transfer

Honors Program students successfully transfer to colleges and universities across the country. However, we have a special arrangement with the UCLA Transfer Alliance Program. Students who complete at least 56 units in a pattern that satisfies both the UC lower division and major course requirements, complete at least eight (8) Honors classes or 24 Honors units within these 56 units, and maintain an overall grade point average of 3.25, are eligible for the TAP certification.

Satisfactory completion of the above guarantees priority consideration for admission to the UCLA College of Letters and Science with junior standing. A similar agreement with USC, called the Transfer Scholars Partnership, is available, as is the Wavelink agreement with Pepperdine University and the PATH agreement with Pomona College.

Application

To be admitted to the Honors Program you must meet the above eligibility requirements, file a completed Honors Program application, send an official copy of all high school transcripts to the Honors Program Office, and take the ENGLISH PLACEMENT TEST. Applications are available in the Honors Program Office, Bldg 2808.

Program Benefits

Students in the Honors Program have priority registration, early bookstore privileges, special Honors counseling, and recognition both on the transcript and at graduation.

In addition, Honors classes are limited to twenty-five students. All Honors students also receive the special services provided by membership in the UCLA Transfer Alliance Program whether or not they are planning to transfer to UCLA. These services include a free UCLA College Library card, tickets to athletic and cultural events, and much more. USC and Pepperdine also offer tickets to sports and cultural events.

PACE -- THE FULL-TIME COLLEGE TRANSFER PROGRAM FOR THE ADULT STUDENT

EARN 12 UNITS OF CREDIT EACH ACADEMIC SEMESTER

CHOOSE WHERE TO ATTEND CLASSES: AT PIERCE OR AT CONVENIENT OFF-CAMPUS LOCATIONS

COMPLETE AN ASSOCIATE IN ARTS DEGREE IN FIVE SEMESTERS

The **Project for Adult College Education (PACE)** is a program of academic courses presented in an accelerated format designed to fit the needs of today's busy adult students. By attending classes one night a week and ten Saturdays each semester, in addition to viewing two hours a week of instructional television, students can earn an Associate in Arts degree in five semesters. PACE courses satisfy most lower-division General Education requirements at CSU's and many other public and private universities. College courses already taken may be applied to the program's requirements, thus reducing the time it takes to complete PACE.

PACE classes are presented from an interdisciplinary, thematic approach. Classes meet from 6:00-10:00 p.m. Tuesdays, Wednesdays, and Thursdays at on-campus and off-campus locations and Saturdays on campus. Students may enter the program at the beginning of any semester and expect to take five semesters to complete the courses.

It is mandatory that in-coming PACE applicants complete **all** of the following steps **prior to enrolling in the program:** (1) File an application for admission to the college; (2) take the college English assessment test and place at least at the English 28 level; and (3) attend one PACE orientation session. Students must bring their assessment test results to the orientation they attend. Anyone who places below the English 28 level must meet with an English advisor prior to enrolling in any PACE classes. To enroll in classes, a student must have a "PACE Permit to Register." Note: The regular Permit to Register (issued to you when you submit your application) will *not* authorize enrollment in PACE classes. PACE permits are available only at the orientations.

First semester PACE students must enroll in at least three of the four classes and attend an essay skills workshop presented the first Monday of the semester.

Procedures for enrolling in PACE classes are different than for regular Pierce classes. Please refer to the page on the PACE program in the current Schedule of Classes for information about the procedures.

PACE INSTRUCTIONAL SATURDAYS 1994-95

FALL 1994: August 27; September 10 and 24; October 8, 22, and 29; November 12 and 19; and December 3 and 17.

SPRING 1995: January 21; February 4, 11, and 25+; March 4, 18, and 25; April 8, 22, and 29+, and May 6 and 20. (+Indicates additional Saturday sessions required for Physical Science 14.)

FIVE SEMESTER CURRICULUM: COURSE OFFERINGS

First-semester students must enroll in at least three of the four courses.

FALL 1994: "Culture, Community, and Identity"

Economics 2	Principles of Economics II
English 28	Intermediate Reading and Composition*
English 101	College Reading and Composition I*
History 12	Political & Social History of the U.S.
Philosophy 6	Logic in Practice

SPRING 1995: "Values, Technology, and Society"

Business 1	Introduction to Business
Humanities 30	The Beginnings of Civilization
Philosophy 3	Introduction to Greek Thought
Physical Science 1	Physical Science
Physical Science 14	Physical Science Lab**

FALL 1995: "Changing Life on Earth"

Anthropology 101	Human Biological Evolution
Health 9	Health for the Mature Adult
Humanities 31	Man in Contemporary Society
Philosophy 20	Ethics

SPRING 1996: "Perspectives on Everyday Life"

English 209	California Literature
Political Science 1	The Government of the U.S.
Psychology 1	General Psychology I
Speech Comm 101	Oral Communication I

FALL 1996: "Work and Society"

Art 103	Art Appreciation I
English 240	Literature and the Motion Picture I
History 11	Political & Social History of the U.S.
Statistics 1	Elementary Statistics I for the Social Sciences***

All courses are 3 units, except the 1-unit Physical Science 14 lab.

* Students enroll in English 28 or 101, depending upon their Assessment Test levels.

** Physical Science 14 requires additional instructional Saturday sessions.

*** Students must meet eligibility requirements prior to enrolling in Statistics 1.

Instructional Television (ITV)

Each semester, the District-wide Instructional Television program of the Los Angeles Community College District presents, via television, a variety of transferable undergraduate level college credit courses.

Instructional Television courses are convenient, flexible and especially suitable for college students needing to supplement their on-campus program or to add classes for those times when campus attendance is not possible.

Students enroll by mail, view telecourse lessons at home or at a Learning Center at one of the colleges, complete reading and study assignments, attend seminars held on weekends at a Los Angeles Community College near their home, and take a midterm and final exam.

A full-time Los Angeles Community College instructor with office hours and phone times is assigned to each telecourse. The students enrolled in television classes keep in touch with faculty by telephone, mail, and fax, as well as at the seminars. Interested students are invited to attend the ITV Open House/Get Acquainted Days held at the beginning of each semester or to visit the office of the Instructional Television program on the campus of Los Angeles City College, Bungalow 120, 855 North Vermont, Los Angeles, California 90029. Call (213) 953-44TV or (818) 901-8935 for information.

International Education Program Study Abroad Classes

College credit classes are offered for the Los Angeles Community College District by the International Education Program. With instructors selected from all nine colleges in the District, classes are taught in over twenty countries around the world. Scheduled at various times throughout the year, opportunities for study currently include Spanish language and civilization, history and art instruction in Mexico and Spain, French, French Civilization and art in Paris, Italian, Italian Civilization and art in Italy, ecology in Mexico, theater in England, fashion design in New Yourk, art in Portugal, and music and culture in Central Europe. New programs include a semester in Sydney, Australia. Again being offered is the very populart semester in Cambridge, England. On-site investigation of the history and culture of other nations provide students and their instructors with some of the best educational experiences of their lives. The LACCD is a member of California Colleges for International Education, a consortium of colleges offering semester programs in Paris, England, Germany, Mexico, Japan, China, and Spain. The International Education Program also cooperates with the Community Services/Extension Programs at District colleges in offering non-credit travel study programs.

The International Education Program expresses the shared commitment of the Los Angeles Community Colleges in furthering the development of international and intercultural awareness. Call (213) 891-2282 for further information.

The Pierce College Extension Program

Pierce Extension is the educational outreach program of the College offering community, continuing, and contract education classes as well as cultural and recreational activities through the Office of Community Services on a not-for-credit basis.

Community Education provides opportunities for personal and professional development, skill improvement and upgrading, cultural enrichment and recreational enjoyment for all ages.

Continuing Education, a community-based program, emphasizes lifelong personal and professional growth.

Contract Education offers personalized, quality classes and timely workshops to local business and industry on campus or at the workplace. This program can augment a company's current training program or develop specialized classes to meet professional needs.

These activities are offered in addition to Pierce College's instructional program and are not academic equivalents of regular credit classes or prerequisites for the traditional college program. Most programs are supported by participant fees and receive no direct general purpose tax funds.

Through the Extension Program, Pierce College hopes to serve your interests, and through you, our whole community. For a Calendar of activities or further information, please contact the Community Services Office at (818) 719-6425.

ADMISSION AND REGISTRATION INFORMATION

ADMISSION ELIGIBILITY

Persons who possess a high school diploma or its equivalent meet the basic eligibility requirement for admission to any public California two-year community college.

Persons who do not possess a high school diploma or its equivalent but who meet additional criteria are also eligible for admission if in the judgment of the College Admissions Officer they are capable of profiting from the instruction offered.

Additional eligibility criteria include:

1. Persons who are eighteen (18) years of age.
2. Persons who are apprentices, as defined by Section 3077 of the California Labor Code.
3. Persons in grades K-12, under special circumstances.

Information regarding other eligibility criteria and/or admission procedures is available in the Office of Admissions and Records.

International Student Admission

International students are accepted at Pierce College each semester. The forms required for admission are available in the International Students' Office in the Campus Center. Each applicant must provide evidence of a TOEFL score of 500 or completion of ELS Level 109, a college application, a statement of financial support, a health statement, and a complete set of transcripts. A non-refundable $35 processing fee must accompany each application . The deadlines for submission of these materials are November 20 for spring semester and June 24 for fall semester.

Upon receipt of these application materials, a decision regarding admissibility is made, and an I-20 is issued to the applicant. The student must present the I-20 to either the Immigration and Naturalization Service (when changing visas) or to a United States Embassy or Consulate (when the student is out of the country) in order to obtain an F-1 Visa. Immigration regulations require that all F-1 Visa students must be enrolled in a minimum of 12 units each semester.

Any F-1 Visa student who is not enrolled in 12 units is considered "out of status" and jeopardizes his/her stay in the United States.

Information regarding international student admission or immigration regulations pertaining to F-1 student status may be obtained through the International Students' Office.

See also International Students Program.

PROCEDURES FOR ADMISSION AND REGISTRATION

Admission

The following procedures must be followed by all students, day or evening.

1. **Submit an Application for Admission.** Application forms are available at the Information Desk beginning on the first day applications are accepted as indicated in the schedule of classes. See the College Calendar in the schedule of classes for deadlines for the submission of applications. These deadlines are strictly enforced.
   A. **Provide a Social Security number on the application form.** The Los Angeles Community College District maintains a student record system that uses the Social Security number to identify an individual's record. However, if students do not wish to report their Social Security numbers, an alternate identification number will be assigned by the College. Changes in a student's ID# may be made only in the Admissions Office. All future correspondence and requests for transcripts and other information must include this number. Social Security numbers, like all other student information, are confidential and will be used only as identification numbers.
   B. **Complete all required information.** All information requested on the application must be provided. The application must declare under penalty of perjury that all information on the application is correct. All information is subject to verification; falsification or withholding of information shall constitute grounds for dismissal.
2. **Take the Chemistry Placement Test.** Required only of students who wish to enroll in Chemistry 1, General Chemistry I, as their first chemistry course at Pierce College.
3. **Take the Physics Placement Test.** Required of all students planning to enroll in Physics 1 unless the student has completed Physics 6 with a grade of "C" or better.

Matriculation

Matriculation - What is it?

Matriculation is a process designed to assist students in achieving their educational goal at Pierce College. It is an agreement between the college and the student. Pierce College agrees to provide an organized process of admission, orientation, assessment, counseling, and student progress follow-up. The student agrees to declare a specific educational goal, attend class, and complete all assigned coursework.

What is the purpose of Matriculation?

The purpose of Matriculation is to ensure that all students complete their college courses, persist to the next academic term and achieve their educational objective. Matriculation provides students with easy access to the college's programs and services. These services can help you to have higher grades, complete more classes, and persist from semester to semester.

Who is eligible for Matriculation?

All first-time students who have declared a goal of earning a certificate, AA, or transferring are subject to matriculation.

Matriculation at Pierce College

Matriculation is a campus-wide program. Success is measured by the attainment of the student's stated educational goal or objective. The following are the components or steps of Matriculation:

Step 1: Assessment

All students that go through the matriculation process must take an assessment exam. This assessment takes 3 1/2 hours to complete and covers reading comprehension, grammar, essay writing, and math. The assessments are administered by the Assessment Center, and practice tests are available to help students prepare for the exam. The assessment tests help place students in classes where they are most likely to succeed. Placement recommendations are advisory and intended to assist students.

Step 2: Orientation

At the time of your assessment testing, you will view an orientation video. The video will provide you with information about the Pierce campus. The video will familiarize you with the college's programs, services, academic expectations, and institutional procedures. All new students are encouraged to sign up for Personal Development 1, an extended orientation class. Even if you did well in your high school courses, this course could benefit everyone!

Step 3: Counseling and Advisement

All matriculating students are required to meet with a counselor, before registering, to develop a student education plan (SEP). This plan is an educational blueprint that outlines exactly what courses you need to meet your educational goal. Undecided students are encouraged to register for a career counseling class (Personal Development 4 or 8) taught by a career counselor.

Step 4: Follow-up

After enrolling for the first semester, you will continue to receive follow-up services through the Counseling Department, Career Center, and Early Alert program. These services will include help with planning your program for each semester that you are at Pierce, preparing to transfer, and earning an Associate degree. In addition, the Early Alert program helps identify students who begin encountering academic difficulty early in the semester.

Step 5: Matriculation Exemptions

At the time of application, all students are classified as exempt or non-exempt from various matriculation components. Our exemption policy is listed below:

Assessment Exemption Criteria: (1) Students who have already earned an A.A./A.S. degree or higher. (2) Students who are attending Pierce with a goal of personal interest and who have completed fewer than 16 units of college credit.

Note: Students who have completed assessments or pre-requisite courses at other colleges, and have presented this documentation for verification to the Assessment Center Director. (Note: Verification must be presented before an exemption can be granted).

Orientation Exemption Criteria: (1) Students who have already earned an A.A./A.S. degree or higher. (2) Students who are concurrently enrolled at a four-year college or university and who have completed fewer than 16 units of college credit. (3) Students who are concurrently enrolled in the 12th grade or below and who have completed fewer than 16 units of college credit. (4) Students who are attending Pierce with a goal of personal interest and who have completed fewer than 16 units of college credit.

Counseling/Advisement Exemption Criteria: (1) Students who have already earned an A.A./A.S. degree or higher. (2) Students who are attending Pierce with a goal of personal interest and who have completed fewer than 16 units of college credit.

Matriculation Waivers

Students wishing to waive any matriculation component should request a waiver form from the Information Desk. Please fill out the form, then return it to the Information Desk. You will need to retain a copy of the waiver which must be presented at Station 1 during registration.

Alternative Matriculation Services

Pierce College provides the following alternative matriculation services:

1. If English is not your primary language, you may wish to take advantage of Language Assisted registration. Every day during registration, interpreters in Armenian, Chinese, Farsi, Japanese, Korean, Spanish, and Vietnamese will be available to assist you with filling out registration forms.

   In addition, Pierce is in the process of translating our application questions into various languages. At the present time, you may request information in Farsi and Spanish at the Information Desk.
2. If you have a physical, visual, or communication limitation that might require special assistance for any matriculation component, please come to the Matriculation Office in Administration 1001 for more information on how the college can provide accommodations for you.

Students with complaints or challenges to any matriculation provisions may appeal to the Matriculation Coordinator in ADMIN 1001 or call (818) 719-6406 for more information.

ENGLISH PLACEMENT TEST

The results of the English Placement Test or a valid English Enrollment Authorization Form must be presented at registration or included in the mail-in registration packet in order to enroll in English 21, 28 or 101, English 82, 84-87, or Developmental Communications 20 or 22.

All student planning to enroll in an English course for the first time are expected to take the English Placement Test at the Pierce College Assessment Center (Campus Center). Contact the Assessment Center at (818) 719-6499 for an appointment and sample test information. Placement results or prerequisite courses taken at other colleges may be presented to the Assessment Center to be substituted for the Pierce English Placement Test.

Placement recommendations made by the English Placement Test are advisory and intended to assist students with enrolling in classes where they are most likely to succeed. Upon completing the test, students are advised of their recommended placement and given their authorization to enroll. Students seeking authorization to enroll in a course other than that recommended by the assessment test must meet with an English department advisor.

Students currently or previously completing an English course at Pierce with a grade of "C" or better will be issued an Enrollment Authorization Form by the instructor.

MATHEMATICS PLACEMENT TEST

The results of the Mathematics Placement Test or a valid Mathematics Enrollment Authorization Form must be presented at registration or included in the mail-in registration packet in order to enroll in any math course, except Mathematics 105, 110, 112, 145, or 146.

All students who have not completed a college mathematics course must take an appropriate Mathematics Placement Test at the Pierce College Assessment Center (Campus Center). Contact the Assessment Center at (818) 719-6499 for an appointment and sample tests. Review is essential because the test cannot be taken again for six months.

Placement tests are given at four levels: Algebra Readiness, Elementary Algebra, Intermediate Algebra, and Precalculus. Upon completing the test, students are advised of their recommended placement and given an authorization to enroll in that course. Students seeking authorization to enroll in a course other than that recommended by the assessment test must obtain enrollment authorization from a Mathematics Department advisor, if they have satisfied the prerequisite.

Students currently or previously completing a mathematics course at Pierce will be issued an Enrollment Authorization Form by the instructor.

Indicated prerequisites for mathematics courses are not waived on the basis of any assessment test scores.

RESIDENCE REQUIREMENTS

California Residence Requirement

To attend any of the Los Angeles Community Colleges as a resident of California, a student is required to have been a California resident for more than one year immediately preceding the Residence Determination Date. The "Residence Determination Date" is that day immediately preceding the opening day of instruction of the semester or summer session. Residence is defined as a union of act and intent.

Non-Resident

A non-resident student is one who has not had residence in the State of California for more than one year immediately preceding the Residence Determination Date. Residence is defined as a union of act and intent. Physical presence alone is not sufficient to establish California residency nor is intent when not coupled with continuous physical presence in the State. Certain non-U.S. citizens are permitted to establish residency and certain others are not. Check with the Admissions Office regarding your particular status.

A student classified as a non-resident will be required to pay non-resident tuition fees as established by the District Board of Trustees.

Residence Reclassification

Students who have been classified as non-residents must petition to be reclassified as residents before the start of any semester if they feel their status has changed. Non-resident students applying for reclassification as residents must also show financial independence for the past three years. The Residence Reclassification form is available in the Admissions Office and must be submitted prior to the semester in which reclassification as a resident is to be effective.

Residence Appeal

A student may appeal the residence classification determined by the College. The appeal must be made within 30 calendar days of receipt of notification of the residence classification from the Admissions Office. The appeal must be submitted in writing to the College Admissions Officer who will forward it to the District Residency Appeal Officer.

REGISTRATION POLICIES

Registration

Registration is the process whereby the student is entered onto the College roll for the semester and is enrolled in specific classes. No student may enroll in classes, whether during registration or after the semester begins, by Instructor Add, unless registration has been completed. All students will be issued a Registration/Fee Receipt as the last step in the registration process.

Permit to Register

Upon acceptance of a student's application, the student will be issued a Permit to Register. The Permit will provide the student with an appointment to register into the College. Registration is by appointment only. Students are urged to file their applications as early as possible since appointments are given out on a first-come first-served basis.

Adding and Dropping Classes

Adding Classes

Only students who have been admitted to the college and are in approved active status may add or attend classes.

Admitted students who wish to add a class must obtain an add card from the instructor. It is the student's responsibility to have the add processed before the last day to add, which is listed in the college semester calendar.

Dropping Classes

Students wishing to drop one or more classes must do so through the Admissions Office by filing a DROP CARD.

It is the student's responsibility to drop from class. Students must drop by the end of the second week of the semester to avoid fees. Any drops or exclusions that occur between the end of the 4th week (or 30% of the time the class is scheduled, whichever is less) and the end of the 14th week (or 75% of the time the class is scheduled, whichever is less) will result in a "W" on the student's record which will be included in the determination of progress probation. Drops are not permitted beyond the end of the 14th week.

A grade (A, B, C, D, F, CR, I, or NC) will be assigned to students who are enrolled past the end of the 14th week even if they stop attending class, except in cases of extenuating circumstances. After the last day of the 14th week (or 75% of the time the class is scheduled, whichever is less) students may withdraw from class upon petition demonstrating extenuating circumstances and after consultation with the appropriate faculty.

DISTRICT POLICIES

Open Enrollment

Unless specifically exempted by law, every course for which State aid is claimed is fully open to any person who has been admitted to the College and who meets the appropriate academic prerequisites.

Course Prerequisites

It is the student's obligation to know and meet course prerequisites. These are stated in the catalog description of each course. The student may be required to file proof of meeting prerequisites. Title 5, Section 55534(a), permits students to appeal any prerequisite based on the unavailability of the necessary course.

Credit for Prerequisites

Students may not concurrently enroll in and receive credit for an advanced course and its prerequisite(s). Students may not enroll in and receive credit for the prerequisite(s) to an advanced course if they have previously completed the advanced course.

Violation of this regulation will result in exclusion from class and/or denial of course credit.

Cancellation of Classes

The College reserves the right to discontinue any class with insufficient enrollment.

Unit of Work/Study Load

Study List Limitations

Maximum and minimum unit requirements may apply, as follows:

Unit Maximum. The maximum study load is 18 units during a regular semester and 7 units (or two classes) during a summer session. The normal class load for students in the fall or spring semester is from 12 to 18 units a semester for full-time students. A college program of 15 units is equal to at least a 50-hour work week for most students. Students who desire to take 19 or more units may file a Petition for Excess Units in the Assistant Dean of Admission's Office during the week before the semester begins and the first two weeks of the semester.

Those students who will be employed while attending college should consider reducing their programs accordingly. It is suggested that those students who are employed full-time should enroll in no more than one or two classes or 9 units maximum.

Restricted Programs

Students may be required to enroll in a restricted program if their grades or test results indicate that this is in their best interest. The College may limit either the number of units in which a student may enroll or may specify certain subjects as a condition of enrollment. Students who violate such requirements will be subject to dismissal.

Concurrent Enrollment

Concurrent enrollment in more than one section of the same course during a semester is not permitted, with the exception of certain Physical Education classes on a limited basis.

Concurrent enrollment in courses which are cross-referenced to each other is not permitted (i.e., courses designated "same as" in the District Directory of Educational Programs and Courses).

Violation of this regulation will result in exclusion from class and denial of course credit in both courses.

Enrolling in classes scheduled or conducted during overlapping times is not permitted. In addition to exclusion from both classes and denial of credits, violators will be subject to disciplinary action (See Standards of Student Conduct).

Auditing Classes

Students may be permitted to audit a class under the following conditions:

1. Payment of a fee of $15 per unit. Fees may not be refunded or transferred. Students enrolled in classes to receive credit for ten or more semester units shall not be charged a fee to audit three or fewer semester units per semester.
2. Students auditing a course shall not be permitted to change their enrollment in that course to receive credit for the course.
3. Priority in class enrollment shall be given to students desiring to take the course for credit.
4. Permission to enroll in a class on an audit basis is at the instructor's discretion.
5. Participation in class activities by student auditors will be solely at the discretion of the instructor, who may provide a written statement of the extent of participation allowed beyond observation.

STUDENT FEES

Enrollment Fee

Enrollment fees are set by the California State Legislature and are subject to change.

Section 72250 and Section 72252 of the State Education Code requires Community Colleges to charge enrollment fees of each student enrolling in college. The fee prescribed by these sections is currently thirteen dollars ($13) per unit per semester with no maximum per semester. If you take ten units, the cost will be $130. If you take fifteen units, the cost will be $195 and so forth. Students who previously have been awarded a bachelor or graduate degree from any public or private postsecondary educational institution must instead pay a differential fee of fifty dollars ($50) per unit per semester. Exempt from payment of the $50 per unit fee are students with degrees from unaccredited schools; students enrolled in mandated courses for police, fire protection, corrections, probation, or emergency services; displaced workers; displaced homemakers; and persons receiving AFDC, SSI/SSP, or general assistance. See the Financial Aid Office prior to payment for enrollment or differential fee waiver assistance. Non-resident students paying non-resident tuition are exempt from the fifty dollar ($50) per unit differential fee but are required to pay the thirteen dollar ($13) per unit enrollment fee.

See page 16 for Fee and Refund Schedules.

Students may be dropped from classes for non-payment of enrollment fees and tuition.

If at the time of enrollment you are receiving benefits under the Aid to Families with Dependent Children Program, the Supplemental Security Income/State Supplementary Program, or the General Assistance Program, the enrollment fee will be waived. For information on the procedure for requesting a waiver, contact the Financial Aid Office prior to the date of your enrollment.

Financial aid may be available to students who meet the qualification requirements. Students with questions concerning financial aid eligibility should contact the College Financial Aid Office. Applications should be submitted as soon as possible.

Enrollment Fee Assistance

Students with no prior baccalaureate degree:

The college offers enrollment fee assistance to students who are unable to pay the enrollment fee. Students should complete the Board of Governors' **Enrollment Fee Waiver** application (available in the Admissions Office as well as the College Financial Aid Office) and submit it to the college Financial Aid Office for processing **prior to enrollment in classes.**

The **Enrollment Fee Waiver** is available to families or students who receive Aid to Families with Dependent Children (AFDC), General Relief (GR), or Supplemental Security Income (SSI), dependents of deceased or disabled veterans of the U.S. Military, and students whose family income and size fall within the following limits:

Number in Household (including yourself)	Total 1993 Family Income (Adjusted Gross Income and/or Untaxed Income)
1	$ 7,500 or less
2	$15,000 or less
3	$16,000 or less
4	$17,000 or less
+	Add $1,000 for each additional dependent

Note: Students who qualify for the Enrollment Fee Waiver either by receiving benefits listed above or by household size and income level are also exempt from paying the health fee.

Students with financial need established by the College Financial Aid Office may also be eligible for an Enrollment Fee Waiver but will be required to pay the health fee.

Students that have a prior baccalaureate degree:

A Differential Fee Exemption is available for students who have a baccalaureate degree and meet one of the following criteria:

1) Qualify as a "Dislocated Worker" within the meaning of the Job Training Partnership Act, and have a certificate of continuing eligibility which is available upon request. A Dislocated Worker is defined as someone who a) has been terminated or laid off or who has received a notice of termination or layoff from employment, is eligible for or has exhausted unemployment compensation and is unlikely to return to their previous industry or occupation, **OR** b) has been terminated or received a notice of termination of employment as a result of any permanent closure of or any substantial layoff at a plant, facility, or enterprise, **OR** c) is long-term unemployed and has limited opportunities of employment or re-employment in the same or a similar occupation in the area in which the individual resides, including older individuals who may have substantial barriers to employment by reason of age, **OR** d) is self-employed (including farmers and ranchers) and is unemployed as a result of general economic conditions in the community or because of natural disasters.

2. Qualify as a "Displaced Homemaker" which is defined as a person who meets **all** of the following three conditions: a) has not worked in the labor force for a substantial number of years, but has worked in the home providing unpaid service for family members; and b) has been dependent upon public assistance or on the income of another family member, but is no longer receiving such assistance or income; and c) is unemployed or underemployed and is experiencing difficulty in obtaining or upgrading employment.

3. Be an employee or volunteer of a public agency providing services for the Police, Fire Protection, Corrections, Probation or Emergency Services and are taking state mandated classes.

4. Be enrolled in education courses pursuant to a contract between the college and a public or private entity.

5. Qualify for a Board of Governor's **Enrollment Fee Waiver.** See qualifying rules for an Enrollment Fee Waiver above.

Students with financial need as established by the college Financial Aid Office may also be eligible for a **Differential Fee Exemption** as well as other types of financial aid.

Enrollment Fee Refund Policy

For full term courses: The student will receive a full refund up to the end of the second week of classes. After that date, there will be no refunds unless a class is cancelled or rescheduled by the College administration. After the second week of the semester, fees will not transfer when the student adds and drops, whether or not the student has paid.

For short term courses: The student will receive a full refund up to the end of a period of time equal to 10% of total class time. There will be no refunds after that, unless the student must drop a class because it is canceled or rescheduled by the administration.

Non-Resident Tuition Fee

The 1994-95 tuition fee for non-resident students is $119 per semester unit for students who are non-residents from another state; $124 per semester unit for students who are non-residents from a foreign country. Tuition must be paid at the time of registration. This fee is subject to change each academic year.

Please note: Non-resident students are also required to pay the community college enrollment fee.

Students must drop classes by the refund deadline in order to avoid being charged the enrollment fee and the non-resident tuition fee. In addition, after the refund deadline, fees will not transfer when students add and drop classes, whether or not fees have been paid.

Non-Resident Tuition Refund Criteria and Schedule

Non-resident students who formally drop part or all of their enrollment may request a refund of previously paid non-resident tuition in accordance with the schedule below. Such requests must be made in writing on a form provided by the District.

The date used for non-resident refund purposes is the date on which such requests is filed and time stamped, regardless of when separation may have occurred. All non-resident refunds will be made by mail.

Non-resident refunds will be computed as follows:

CLASS TYPE	DATE REQUEST TIME STAMPED	REFUND
Regular Length (Fall, Spring, Summer)	Through second week of instruction	Full Tuition
	After second week of instruction	No Refund
Short Term (Less than regular length)	Through 10 percent of class length	Full Tuition
	After 10 percent of class length	No Refund

Parking Fee

Parking in areas marked "Parking by Permit Only" will be restricted to vehicles displaying a valid permit. Parking Permit procedures and fee information are available in the Business Office.

Parking

In December 1982 the LACCD supplemented its mandatory parking fee for any student wishing to park on campus during hours of instruction by allowing the Associated Students to offer preferential parking in **three of the campus's seven major parking lots (lots 1, 6, and 7) as a benefit of membership.** The ASO decal will be issued on payment of the $7 ASO membership fee.

The student parking fees are as follows:

FALL AND SPRING SEMESTER PARKING PERMIT FEES

Non-Preferred/Restricted District Permit	$20.00
A.S.O. Parking Fee	7.00
Preferred/Non-Restricted Permit TOTAL FEE	$27.00

SUMMER SESSION PARKING PERMIT FEES

Non-Preferred/Restricted District Permit	$ 7.00
A.S.O. Parking Fee	3.00
Preferred/Non-Restricted Permit TOTAL FEE	$10.00

The fee payers will be issued a parking decal **which must be displayed in the front windshield in the corner on the passenger side on their vehicle.** Only one decal will be issued to a fee payer. (Duplicate or replacement charge for lost decal $20.) Fees may be paid at the time of registration, at the Business Office prior to 4 p.m. on a working day, or Monday through Thursday after 4 p.m. in Admissions and Records. Citations will be issued to cars not displaying a decal, even if you have paid your parking fee, and fines for such citations will begin at $23. *A REMINDER - The parking decal does not guarantee the possessor the right to a parking space on campus, only the right to come on campus and seek out a parking space.*

SEE CLASS SCHEDULE P.74 FOR FURTHER INFORMATION.

Instructional Materials

Students may be required to provide instructional and other materials for a credit or non-credit course. Such materials shall be of continuing value to a student outside of the classroom setting and shall not be solely or exclusively available from the District.

Associated Student Membership Fee

Experience has demonstrated that student activities are essential features in the program of the College. These activities and programs are financed by money received from memberships in the Associated Student Organization. The charge is $7 per semester.

The funds thus collected will be spent for the general welfare of the students in accordance with policies, rules, and regulations defined by the Board of Trustees. Membership in the Associated Student Organization is encouraged for all students, but is not mandatory.

Upon complete withdrawal from the college, the student may receive a refund of the Associated Student membership fee as follows:

FALL AND SPRING SEMESTERS

Amount Paid	1st Week	2nd Week
7.00	7.00	5.00

SUMMER SESSION

Amount Paid	1st Week	2nd Week
3.00	3.00	-0-

Board of Trustees rules govern the collection, deposit and expenditures of these funds. All records are audited annually by representatives of the Board of Trustees.

FEE AND REFUND SCHEDULES

TYPE OF FEE	AMOUNT	REFUND DEADLINE
Enrollment Fee:		
Students without a prior bachelor's or graduate degree:	$13 per unit	End of the second week of the semester (Deadline for short term classes will be different for each class)
Students with a prior bachelor's or graduate degree:	$50 per unit	
Non-resident Tuition (All non-resident students must pay the $13 per unit enrollment fee in addition to non-resident tuition)		
Students from another State:	$119 per unit	
Students from another country:	$124 per unit	
International Student (FT VISA) Application Fee:	$35 End of the second week of the semester	
Health Services Fee	$7.50	End of the second week of the semester
Audit Fee	$15 per unit (Students who have enrolled in 10 units or more may audit up to 3 units without charge)	NOT REFUNDABLE OR TRANSFERABLE
Parking Fee	$20	End of the second week of semester
Associated Students Organization Membership Fee	$7	End of first week of the semester - $7 End of second week - $5

Other Fees	
Emergency Processing of Transcript or Verification of Enrollment	$5
Verification of Enrollment	$1
Record of Work in Progress	$1
Transcript	$1

Please note that a $10 returned check charge is assessed for a check returned to the Business Office unpaid by the bank for any reason. A stop payment order on a check does not constitute an official withdrawal nor does it release the student's financial obligation for the fees. A student with an unpaid financial obligation will not be issued transcripts of work completed at the college and will not be able to register for subsequent semesters.

SCHOLASTIC POLICIES

Attendance

Only students who have been admitted to the college and are in approved active status may attend classes.

Students should attend every meeting of all classes for which they register. To avoid being dropped from class, students should contact the instructor when they are absent for emergency reasons.

Students who are preregistered in a class and miss the first meeting may lose their right to a place in the class, but the instructor may consider special circumstances. Whenever students are absent more hours than the number of hours the class meets per week, the instructor may exclude them from class. In addition, the instructor will consider whether there are mitigating circumstances which may justify the absences. If the instructor determines that such circumstances do not exist, the instructor may exclude a student from the class.

Students are responsible for officially dropping a class that they stop attending. See section "Adding and Dropping."

Campus Procedure

Students who because of mitigating circumstances are unable to attend the first class meeting must leave a written message for the faculty member at the Information Desk in the foyer of the Administration Building. Telephone calls with such information will not be accepted.

Leave of Absence

A leave of absence is granted only by the instructor, and it is the responsibility of the student to satisfy the instructor as to the validity of the request for a leave of absence.

Withdrawal

Students intending to withdraw should avail themselves of the opportunity by first discussing the contemplated withdrawal with a counselor. Whether withdrawing from one class or all classes in which the student is enrolled, it is essential that standard withdrawal procedures be observed by filling out the proper forms in the Records Office.

Lecture and Laboratory Credit

In computing the number of units granted for any course, Pierce College follows the general practice of granting one unit of credit for each lecture hour per week on the semester basis.

The College requires two or more hours of attendance per week for each unit of credit for non-lecture periods (laboratory, field work, physical education) which require a minimum of outside preparation.

Final Examinations

Final examinations are to be given in all subjects according to the schedule printed in the Schedule of Classes. No student will be excused from taking a final examination.

All Faculty shall retain the final exams of every student for a minimum of one semester after the end of the semester for which the final exam was given in order to permit students to examine their graded final exams.

GRADES & GRADING POLICIES

Grading Symbols and Definitions

Only the symbols in the grading scale given in this section shall be used to grade all courses offered in fulfillment of the requirements for an associate or baccalaureate degree, a certificate, diploma, or license.

Grades shall be averaged on the basis of the point equivalencies to determine a student's grade-point-average, using the following evaluative symbols:

SYMBOL	DEFINITION	GRADE POINT
A	Excellent	4
B	Good	3
C	Satisfactory	2
D	Passing, less than satisfactory	1
F	Failing	0
CR	Credit (at least equal to a "C" grade or better – units awarded are not counted in GPA)	
NC	No-Credit (equal to a "D" or "F" grade –units are not counted in GPA)	

(CR and NC grades may be given only in courses authorized by the District Credit/No-Credit Option and Credit by Examination Policies.)

The following non-evaluative symbols may be entered on a student's record:

SYMBOL	DEFINITION
I	*Incomplete* Incomplete academic work for unforeseeable emergency and justifiable reasons at the end of the term may result in an "I" symbol being entered in the student's record. The condition for removal of the "I" shall be stated by the instructor in a written record. This record shall contain the conditions for removal of the "I" and a default grade to be assigned if missing work is not completed. This record shall be given to the student, with a copy on file in the College Admissions Office until the "I" is made up or the time limit has passed. A final grade shall be assigned when the work stipulated has been completed and evaluated, or when the time limit for completing the work has passed.

The "I" symbol shall not be used in calculating units attempted nor for grade points. THE "I" MAY BE MADE UP NO LATER THAN ONE YEAR FOLLOWING THE END OF THE TERM IN WHICH IT WAS ASSIGNED. The student may petition for a time extension due to unusual circumstances.

Note: Courses in which the student has received an Incomplete ("I") may not be repeated unless the "I" is removed and has been replaced by a grade of "D" or "F". This does not apply to courses which are repeatable for additional credit.

IP *In Progress*

The "IP" symbol shall be used only in those courses which extend beyond the normal end of an academic term. "IP" indicates that work is "in progress," but that assignment of a substantive grade must await its completion. The "IP" symbol shall remain on the student's permanent record in order to satisfy enrollment documentation. The appropriate evaluative grade and unit credit shall be assigned and appear on the student's record for the term in which the required work of the course is completed. The "IP" shall not be used in calculating grade-point-averages. If a student enrolled in an "open-entry, open-exit" course is assigned "IP" at the end of an attendance period and does not complete the course during the subsequent attendance period, the appropriate faculty will assign an evaluative symbol (grade) as specified above to be recorded on the student's permanent record for the course.

W *Withdrawal*

Students may withdraw from a class or classes through the last day of the fourteenth week of instruction or 75% of the time the class is scheduled to meet, whichever is less. To withdraw, complete a Drop Card in the Admissions and Records Office.

No notation ("W" or other) shall be made on the record of a student who withdraws during the first four weeks, or 30% of the time the class is scheduled, whichever is less.

Withdrawal between the end of the fourth week (or 30% of the time the class is scheduled to meet, whichever is less) and the last day of the fourteenth week of instruction (or 75% of the time the class is scheduled to meet, whichever is less) will result in a grade of "W". A student who remains in class beyond the fourteenth week or 75% of the time the class is scheduled shall be given a grade other than a "W", except in cases of extenuating circumstances.

After the last day of the fourteenth week (or 75% of the time the class is scheduled, whichever is less), the student may withdraw from class upon petition demonstrating extenuating circumstances and after consultation with the appropriate faculty. Students should obtain a petition in the Admissions Office. Extenuating circumstances are verified cases of accidents, illness, or other circumstances beyond the control of the student. Withdrawal after the end of the fourteenth week (or 75% of the time the class is scheduled, whichever is less) which has been authorized in extenuating circumstances shall be recorded as "W".

The "W" shall not be used in calculating units attempted nor for the student's grade-point-average.

"Ws" will be used as factors in progress probation and dismissal.

Credit/No-Credit Option

The College President may designate courses in the College Catalog wherein all students are evaluated on a "credit/no-credit" basis or wherein each student may elect, no later than the end of the first 30% of the term, whether the basis of evaluation is to be "credit/no-credit" or a letter grade. These courses will be noted in the College Schedule as being eligible for the *Credit/No-Credit Option.*

1. USAGE FOR SINGLE PERFORMANCE standard. The credit/no-credit grading system shall be used in any course in which there is a single satisfactory standard of performance for which unit credit is assigned. A grade of Credit (CR) shall be assigned for meeting that standard, and a grade of No-Credit (NC) shall be assigned for failure to do so.
2. ACCEPTANCE OF CREDITS. All units earned on a "credit/no-credit" basis in accredited California institutions of higher education or equivalent out-of-state institutions shall be counted in satisfaction of community college curriculum requirements.
3. RECORDING OF GRADE. A student who is approved to be evaluated on the "credit/no-credit" basis shall receive both course credit and unit credit upon satisfactory completion of the course. Satisfactory completion for credit is equivalent to the grade of "C" or better. A student who does not perform satisfactorily will be assigned a "No-Credit" (NC) grade.
4. GRADE Point CALCULATION. Units earned on a "credit/no-credit" basis shall not be used to calculate grade-point-averages. However, units attempted for which "No-Credit" (NC) is recorded shall be considered in probationary and dismissal procedures.
5. STANDARDS OF EVALUATION. The student who is enrolled in a course on a "credit/no-credit" basis will be held responsible for all assignments and examinations required in the course and must meet the standards of evaluation which are identical for all students.
6. CONVERSION TO LETTER GRADE. A student who has received credit for a course taken on a "credit/no-credit" basis may not convert this credit to a letter grade.
7. COURSE REPETITION. A student who has received a grade of "No-Credit" (NC) may repeat the course by meeting the requirements set forth by the District *Course Repetition to Improve Substandard Grades Policy.*

Campus Procedure

1. Certain courses, noted in the Schedule of Classes, are evaluated on a Credit/No Credit basis only. Letter grades may not be assigned for these courses.
2. In addition to courses mentioned above, a student has the option of selecting one course per semester to be graded on a Credit/No Credit basis. This option is available only for courses listed in the Schedule of Classes under "Courses Offered on a Credit/No Credit Basis."
3. Selection of courses to be taken on a Credit/No Credit basis must be made during the time indicated in the schedule. Late requests will not be accepted.
4. Once a course has been selected to be graded on a Credit/No Credit basis, a student cannot receive a letter grade for the course. The decision to take a course on this basis is irrevocable.
5. The general practice at most four-year colleges is not to accept "credit/no credit" grades for courses required for the major or preparation for the major. A student planning to transfer to UCLA is required to have at least 42 units in regular letter grades.

Grades and Grade Changes

The instructor of the course shall determine the grade to be awarded to each student in accordance with the preceding *Grading Symbols and Definitions Policy*. The determination of the student's grade by the instructor is final in the absence of mistake, fraud, bad faith, or incompetency. The removal or change of an incorrect grade from a student's record shall only be done upon authorization by the instructor of the course.

In the case of fraud, bad faith, or incompetency, the final determination concerning removal or change of grade will be made by the College President.

Campus Procedure

Students may petition the Office of Academic Affairs to have an instructor reevaluation of a course grade, provided the grade in question was originally issued within the last two years. Grade changes will not be considered for grades issued more than 2 years ago.

Transcripts

Upon written request of the student, a copy of the student's academic record shall be forwarded to the student or his or her designated addressee promptly by U.S. mail or other responsible forwarding agency.

A student or former student shall be entitled to two free copies of the transcript of his or her record or to two free verifications of student records. Additional copies shall be made available to the student, or to an addressee designated by the student, at a cost of $1. Students may request special processing to expedite their request for an additional fee of $5. This option is subject to the College's ability to provide this service. Requests for transcripts or verifications may be obtained in the Office of Admissions. Transcripts from another institution are not available for copying.

The student's transcript may be withheld if 1) any library books or other library materials are charged to the student and are unreturned, or 2) there are any unpaid fees or charges due to the College. The transcript may be withheld until these obligations of the student to the College are discharged.

Student Records and Directory

The Los Angeles Community College District, in compliance with Federal and State law, has established policies and procedures governing student records and the control of personally identifiable information. The Los Angeles Community College District recognizes that student records are a confidential matter between the individual student and the College. At the same time the District has a responsibility to fulfill public information needs (i.e., information about students participating in athletics, announcement of scholarships and awards, etc.). To meet this responsibility the District may release Directory Information unless the student states in writing that he or she does not want it released. The responsibility for carrying out these provisions is charged to the College Records Officer, designated by the chief administrative officer on each campus. The Records Officer may be contacted via the Office of Admissions. Copies of Federal and State laws and District policies and procedures are maintained by the Records Officer and are available for inspection and inquiry.

All student records maintained by the various offices and departments of the College, other than those specifically exempted by law, are open to inspection by the student concerned. The accuracy and appropriateness of the records may be challenged in writing to the Records Officer. A student has the right to receive a copy of his or her record, at a cost not to exceed the cost of reproduction. (Requests for transcripts should be made directly to the Office of Admissions).

No student records, other than Directory Information, will be released without the written consent of the student concerned except as authorized by law. A log of persons and organizations requesting or receiving student record information is maintained by the Records Officer. The log is open to inspection only to the student and the community college official or his or her designee responsible for the maintenance of student records.

Directory Information includes the student's name, city of residence, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. Directory Information about any student currently attending the College may be released or withheld at the discretion of the Records Officer.

No Directory Information will be released regarding any student who has notified the Records Officer in writing that such information shall not be released.

All inquiries regarding student records, Directory Information, and policies for records access, release, and challenge should be directed to the Records Officer via the Office of Admissions.

Students have the right to file a complaint with the United States Department of Education concerning alleged violations of Federal and State laws governing student records.

Family Education Rights and Privacy Act

See Student Records and Directory Information.

ACADEMIC HONORS

Graduation honors and awards are to be based on the student's cumulative grade-point-average for all college work attempted.

This policy is adopted for use in the Los Angeles Community College District only. Other institutions may differ and students planning to transfer to another college should contact that institution regarding its policy.

Awards

Graduating students of outstanding personality, scholarship, and leadership are recognized through the yearly presentation of awards within the several departments of the College. Recipients of these awards are determined through department procedures.

Pierce College Distinguished Scholar Award

The Award is given at the College Commencement exercises. In order to be considered for the award, a candidate must:

1. Petition for the Associate Degree
2. Achieve a grade-point-average of 3.70 or better in all college work attempted at the time of petition, and be in good standing.
3. Complete at least 50% of all units utilized for the award within the Los Angeles Community College District.
4. Achieve a grade-point-average of 3.70 and be in good standing in all college work attempted at the end of the Fall semester if graduation requirements will not be completed until the end of the Spring semester.

Please note: Spring candidates for this award will be listed as *Candidates* in the graduation program. After the final grade point evaluation, if the student achieved a 3.70 GPA, he or she will be awarded the Award.

Students who possess Associate, equivalent or advanced degrees are not eligible for this award.

Dean's List

Each semester a list is published containing the names of students who have completed 12 or more units of graded classes (credit/no-credit is not included) during the preceding semester with a grade-point average of 3.5 or better. Part-time students may also receive recognition through the Part-time Dean's List, which honors students who have achieved a 3.5 or better grade-point average in a total of 12 units taken over several semesters. For more details about the Part-time Dean's List, contact the Admissions and Records Office. Further recognition is afforded Dean's List students by means of a personal letter from the Vice President of Academic Affairs and a notation on the transcript.

President's Award

A perpetual trophy and scholarship have been donated by the Associated Student Organization to the College President so that one or two outstanding graduating students can be recognized. The student must have maintained a 3.0 GPA for all college work, successfully participated in co-curricular activities, demonstrated leadership, served both the College and the community, and exhibited desirable personal qualifications.

ACADEMIC STANDARDS & CREDIT POLICIES

Credit by Examination

Some courses in the college catalog are eligible for credit by examination.

1. Methods of obtaining credit by examination

a. Achievement of a score of 3 or higher on an Advanced Placement Examination administered by the College Entrance Examination Board.

b. Achievement of a score of 500 or higher on one of the College Level Examination Program (CLEP) general exams. Pierce College does not grant credit for the subject area exams.

c. Credit by satisfactory completion of an examination administered by the college in lieu of completion of a course listed in the college catalog. This option is available for selected courses only. Contact the Admissions Office for the current course list.

d. Achievement of a score that qualifies for credit on an examination administered by other agencies approved by the college.

2. Determination of Eligibility to Take College Administered Examinations. Students who qualify

a. Must be currently registered in the college, in good standing, and with a minimum grade point average of 2.0 in any work attempted at the college.

b. May petition for credit by examination if they are

1) eligible to take such course for credit under existing regulations.

2) have not completed a course or are not in the process of taking a course which is more advanced than the course for which credit is requested. This requirement may be waived at the discretion of the appropriate administrator.

3. Maximum credit allowable for credit by examination

The maximum number of credits allowable for credit by examination for the Associate Degree shall be fifteen (15) units. Credit by examination transferred from other institutions is counted toward this maximum.

4. Limitations

Credits acquired by examination are not applicable to meeting such unit load requirements as Selective Service deferment, Veteran's or Social Security benefits.

5. Recording of credit

a. If a student passes the examination, the course shall be posted on his/her cumulative record indicating "Credit" in the "Grade" column.

b. The number of units of credit recorded for any course may not exceed those listed in the college catalog.

Acceptance Towards Residence

Units for which credit is given pursuant to the provision of this section shall not be counted in determining the 12 units of credit in residence requirement.

Recording of Grade

Students who successfully pass an approved examination shall have the record of such examination entered on their record as "CR" as provided by the District Grading Symbols and Definitions Policy. The student's records shall also be annotated "Credit by Examination".

Academic Renewal

The following policy applies only to classes taken at Pierce College. Students may submit a petition to the Office of Admissions and Records to have grades of "D", "F", or "No Credit" removed from their grade-point-average under the following conditions:

1. Students must have achieved a grade-point-average of 2.5 in their last 15 semester units, or 2.0 in their last 30 semester units completed at any accredited college or university, and
2. At least two calendar years must have elapsed from the time the course work to be removed was completed.

If the above conditions are met, academic renewal shall be granted, consisting of:

1. Eliminating from consideration in the cumulative grade-point-average up to 18 semester units of course work, and
2. Annotating the student academic record indicating where courses have been removed by academic renewal action.
3. Granting of Academic Renewal does not mean the course can be repeated beyond the maximum repeatability listed for the course.

Academic renewal actions are irreversible.

Course Repetition to Improve Substandard Grades

Students may petition for approval to repeat up to a total of 15 units in which substandard grades (less than "C," 2.0) were awarded.

Students may repeat the same course only once for this purpose.

Upon completion of a course repetition, students may petition to have the most recent grade earned computed in the cumulative grade-point-average, the substandard grade removed from the grade-point-average calculation and the student's academic record so annotated.

No specific course or categories of courses shall be exempt from course repetition.

This policy is adopted for use in the Los Angeles Community College District only. Other institutions may differ and students planning to transfer to another college should contact that institution regarding its policy.

Campus Procedure

"Request for Review of Academic Record" forms are available at the Information Desk in the Administration Building. This form should be filed to request permission to repeat a course *before* enrolling in the course for a second time.

Course Repetition: Special Circumstances

Repetition of courses for which substandard work has not been recorded shall be permitted only upon advance petition of the student and with written permission of the College President or designee based on a finding that circumstances exist which justify such repetition. In such repetition under special circumstances, the student's permanent academic record shall be annotated in such a manner that all work remains legible. Grades awarded for repetition under special circumstances shall not be counted in calculating a student's grade-point-average.

Course Repetition and Activity Repetition

Certain courses in the Catalog may be repeated for additional unit credit. These courses, marked "RPT" in the Course Section of the Catalog, allow the student an expanded educational experience each time the student enrolls in the course. Enrollment in these courses is limited in any similar activity to a maximum of three repeats for a total of four (4) enrollments, regardless of the repeatability of individual courses. The activity limitation also applies to courses which are not repeatable in themselves but for which similar activities exist. For example, there are several similar course titles in Art, Music, Theater, and Physical Education which are considered to be the same activity. A student may enroll four times in courses which are considered to be the same activity, such as twice in Theater 279, Musical Theater (RPT 3), and twice in Theater 280, Musical Theater Workshop (RPT 3). Any combination may be used as long as 4 enrollments in one activity is not exceeded.

This activity enrollment limitation begins with the Fall 1983 term. Excess enrollment will result in administrative drop. Consult a counselor for the latest restricted activity enrollment list.

NOTE: Whenever the student's record is reviewed for the purpose of determining his or her unit credits, all of the student's record is reviewed, not just the course work since the beginning of Fall 1983.

Transfer Credit Policy

Transfer credit for lower division courses taken at regionally accredited institutions of higher education in the United States is accepted toward Associate Degrees or Certificates. Students must provide official transcripts.

For additional information, contact the Graduation Office.

Foreign Transcript Credit Policy

Students who have completed college level courses at schools outside the United States may petition for an unlimited number of lower division units of credit toward an Associate Degree or Certificate under the following conditions:

1. Students must submit a detailed evaluation from an approved evaluation service. Students are responsible for the cost of this service.
2. The foreign university or college must have been approved by that country's Ministry of Education at the time the student attended.

3. No courses may be used to satisfy the Associate Degree's Reading and Written Expression or oral communication requirement unless the course was taken in a country where English is the native language.
4. No course may be used to satisfy the Associate Degree's American Institutions requirement.
5. In cases where equivalent course credit is not granted, elective credit may be awarded.

For additional information, contact the Graduation Office.

Credit for Courses Completed at Non-Accredited Institutions

Students transferring from non-accredited institutions may, after successful completion of 30 units with a "C" or better grade-point-average, apply for up to 15 units of credit in courses which parallel the offerings of the College.

The following exceptions may be made to this regulation:

1. Credit for Graduates of Diploma Schools of Nursing.

The following amount of credit is authorized for graduates of Diploma Schools of Nursing who enter the Los Angeles Community Colleges:

a. Thirty (30) semester units of credit will be given to graduates of Diploma Schools of Nursing under the following conditions:
   1) The student presents a valid, current California certificate as a licensed registered nurse to the designated administrative officer;
   2) The student has completed at least 12 units of credit at the College to which application is made.
b. The work of graduates of Diploma Schools of Nursing outside California will be recognized if the student has a valid, current California license. Credit will be given even though the license was obtained on the basis of reciprocity with another state rather than by examination.
c. Candidates for the Associate of Arts or Associate of Science Degree are exempt from Health Education as a general education requirement. No other general education requirements will be waived.
d. Additional courses in Nursing may be taken for credit only upon approval of the Nursing Department.
e. The transcript is not to reflect the major field nor should the diploma, where given, indicate Nursing as a major.

2. Credit for Military Service Training

Students who are currently serving in or have served in the military service, may, after successful completion of at least one course with the Los Angeles Community Colleges, request an evaluation of credit earned through military service training schools and/or military occupational specialties.

3. Credit for Law Enforcement Academy Training

Credit for basic recruit academy training instructional programs in Administration of Justice or other criminal justice occupations shall be granted as follows:

a. Credit will be given for training from institutions which meet the standards of training of the California Peace Officers Standards and Training Commission.
b. A single block of credit will be given and identified as academy credit.
c. One (1) unit of credit may be granted for each 50 hours of training, not to exceed ten (10) semester units or their equivalent.

Credits granted by an institution of higher education for basic recruit academy training, under the above provisions, shall not be identified as equivalent to any required course in the major.

ACADEMIC PROBATION & DISMISSAL

Academic Standards for Probation

The following standards for academic and progress probation shall be applied as required by regulations adopted by the Board of Governors of the California Community Colleges. Probation shall be determined based on student course work dating from Fall, 1981; course work completed prior to Fall of 1981 is excluded from probation calculations.

Probation

A student shall be placed on probation if any one of the following conditions prevail:

a. ACADEMIC PROBATION. The student has attempted a minimum of 12 semester units of work and has a grade-point-average less than a "C" (2.0).
b. PROGRESS PROBATION. The student has enrolled in a total of at least 12 semester units and the percentage of all units in which a student has enrolled and for which entries of "W" (Withdrawal), "I" (Incomplete), and "NC" (No Credit) are recorded reaches or exceeds fifty percent.
c. TRANSFER STUDENT. The student has met the conditions of a or b at another college within the Los Angeles Community College District.

Units Attempted

"Units Attempted," for purposes of determining probation status only, means all units of credit in the current community college of attendance for which the student is enrolled.

Removal from Probation

A student shall be removed from probation upon meeting the criteria specified in this section.

Academic Probation

A student on academic probation for a grade point deficiency shall be removed from probation when the student's cumulative grade-point-average is 2.0 or higher.

Progress Probation

A student on progress probation because of an excess of units for which entries of No-Credit (NC), Incomplete (I), and/or Withdrawal (W) are recorded shall be removed from probation when the cumulative percentage of units in this category drops below fifty percent (50%).

Academic Standards for Dismissal

A student shall be subject to dismissal and subsequently be dismissed under the conditions set forth within this section. Dismissal shall be determined based on student course work dating from Fall, 1981; course work completed prior to Fall of 1981 is excluded from dismissal calculations.

Academic Probation

A student who is on academic probation shall be subject to dismissal if the student has earned a cumulative grade-point-average of less than 2.0 in all units attempted in each of 3 consecutive semesters.

A student who is on academic probation and earns a semester grade-point-average of 2.0 or better shall not be dismissed as long as this minimum semester grade-point-average is maintained.

Progress Probation

A student who is on progress probation shall be subject to dismissal if the cumulative percentage of units in which the student has been enrolled for which entries of No-Credit (NC), Incomplete (I), and/or Withdrawal (W) are recorded in at least 3 consecutive semesters reaches or exceeds fifty percent (50%).

A student who is on progress probation shall not be dismissed after a semester in which the percentage of units in which the student has been enrolled for which entries of "W," "I," and "NC" are recorded is less than fifty percent (50%).

Appeal of Dismissal

A student who is subject to dismissal may appeal to the appropriate College Dean. Dismissal may be postponed and the student continued on probation if the student shows significant improvement in academic achievement but has not been able to achieve to a level that would meet the requirements for removal from probation.

Dismissal

A student who is subject to dismissal, and who has not been continued on probation throughout the appeal process, shall be notified by the College President, or designee, of dismissal which will become effective the semester following notification.

Dismissal from any one college in the District shall disqualify a student from admission to any other college in the District.

Readmission After Dismissal

A student who has been dismissed may request reinstatement after 2 semesters have elapsed. The student shall submit a written petition requesting readmission to College in compliance with College procedures. Readmission may be granted, denied, or postponed subject to fulfillment of conditions prescribed by the College.

STUDENT SERVICES AND ACADEMIC RESOURCES

STUDENT SERVICES

The primary purpose of the office of Student Services is to protect the right of every student to receive a higher education and to ensure that this right will not be infringed upon arbitrarily, capriciously, or in a discriminatory manner, or without due process of law. The Dean of Student Services acts as an advocate for the students. The second responsibility of the office is to enforce the Code of Student Conduct for the safety and protection of the college community and the preservation of academic integrity.

Student Services are designed to assist students in accomplishing their educational objectives and to provide opportunities for involvement in a number of co-curricular activities. Overall supervision is the responsibility of the Dean of Student Services.

Standards of Student Conduct

A student enrolling in one of the Los Angeles Community Colleges may rightfully expect that the faculty and administrators of the Colleges will maintain an environment in which there is freedom to learn. This requires that there be appropriate conditions and opportunities in the classroom and on the campus. As members of the college community, students should be encouraged to develop the capacity for critical judgment, to engage in the sustained and independent search for truth, and to exercise their rights to free inquiry and free speech in a responsible, nonviolent manner. In furtherance of the students' interest in free inquiry and the search for truth, it is also important that students be able to hear the views of non-students and engage in the free exchange of ideas with non-students.

All persons shall respect and obey civil and criminal law, and shall be subject to legal penalties for violation of laws of the city, county, state and nation. All persons shall respect and obey the rules, regulations, and policies of the Los Angeles Community College District. To this end, all students will be asked to sign a statement that they have received the Standards of Conduct and the disciplinary procedures relating to students adopted by the Board of Trustees. All visitors making use of the facilities or grounds of any college of the District will be asked to sign a statement that they have received the Standards of Conduct and the rules relating to campus visitors adopted by the Board of Trustees. Signature will not be a prerequisite to activities on campus. A record will be kept of all persons who use the facilities or grounds of the college.

Conduct in all of the Los Angeles Community Colleges must conform to District and college rules and regulations. Violations of such rules and regulations, may result in disciplinary action depending on the individual's status as student, faculty, staff or visitor.

Violations of such rules and regulations include but are not limited to the following:

Board Rule 9803.10

Willful Disobedience. Willful disobedience to directions of College officials acting in the performance of their duties.

Board Rule 9803.11

Violation of College Rules and Regulations. Violation of College rules and regulations including those concerning student organizations, the use of College facilities, or the time, place, and manner of public expression or distribution of materials.

Board Rule 9803.12

Dishonesty. Dishonesty, such as cheating, or knowingly furnishing false information to the Colleges.

Board Rule 9803.13

Unauthorized entry. Unauthorized entry to or use of the College facilities.

Board Rule 9803.14

College Documents. Forgery, alteration, or misuse of College documents, records, or identification.

Board Rule 9803.15

Disruption of Classes. Obstruction or disruption of classes, administration, disciplinary procedures, or authorized College activities.

Board Rule 9803.16

Theft of or Damage of Property. Theft of or damage to property belonging to the College, a member of the College Community, or a campus visitor.

Board Rule 9803.17

Interference with peace of college. The malicious or willful disturbance of the peace or quiet of any of the Los Angeles Community Colleges by loud or unusual noise, or any threat, challenge to fight, fight, or violation of any rules of conduct as set forth in this Article. Any person whose conduct violates this section shall be considered to have interfered with the peaceful conduct of the activities of the college where such acts are committed.

Board Rule 9803.18

Assault or battery. Assault or battery, abuse, or any threat of force or violence directed toward any member of the College Community or campus visitor engaged in authorized activities.

Board Rule 9803.19

Alcohol and Drugs. Any possession of controlled substances which would constitute a violation of Health and Safety Code section 11350 or Business and Professions Code section 4230, any use of controlled substances the possession of which are prohibited by the same, or any possession or use of alcoholic beverages while on any property owned or used by the District or colleges of the District. "Controlled substance", as used in this section, include but are not limited to the following drugs and narcotics:

a) opiates, opium and opium derivatives
b) mescaline
c) hallucinogenic substances
d) peyote
e) marijuana

f) stimulants and depressants
g) cocaine

Board Rule 9803.20

Lethal Weapon. Possession, while on a college campus or at a college-sponsored function, of any object that might be used as a lethal weapon is forbidden to all persons except sworn peace officers of the State of California.

Board Rule 9803.21

Discriminatory Behavior. Behavior while on a college campus or at a college-sponsored function, inconsistent with the District's non-discrimination policy, which requires that all programs and activities of the Los Angeles Community College District be operated in a manner which is free of discrimination on the basis of race, color, national origin, ancestry, religion, creed, sex, pregnancy, marital status, sexual orientation, age, handicap or veterans status.

Board Rule 9803.22

Unlawful Assembly. Any assemblage of two or more persons to 1) do an unlawful act, or 2) do a lawful act in a violent, boisterous or tumultuous manner.

Board Rule 9803.23

Conspiring to Perform Illegal Acts. Any agreement between two or more persons to perform illegal act.

Board Rule 9804

Interference with Classes. Every person who, by physical force, willfully obstructs, or attempts to obstruct, any student or teacher seeking to attend or instruct classes at any of the campuses or facilities owned, controlled or administered by the Board of Trustees of the Los Angeles Community College District, is punishable by a fine not exceeding five hundred dollars ($500) or imprisonment in a county jail not exceeding one year, or by both such fine and imprisonment. As used in this section, "physical force" includes, but is not limited to, use of one's person, individually or in concert with others, to impede access to or movement within or otherwise to obstruct the students or teachers of the classes to which the premises are devoted.

Board Rule 9805

Interference with Performance of Duties by Employees. Every person who attempts to cause, or causes, any officer or employee of any of the Los Angeles Community Colleges or any public officer or employee to do or refrain from doing, any act in the performance of his/her duties, by means of a threat to inflict any injury upon any person or property, is guilty of a public offense.

Board Rule 9805.10

Assault or Abuse of Instructor. Every parent, guardian, or other person who assaults or abuses any instructor employed by the District in the presence or hearing of a community college student or in the presence of other community college personnel or students and at a place which is on District premises or public sidewalks, streets, or other public ways adjacent to school premises, or at some other place where the instructor is required to be in connection with assigned college activities is guilty of a misdemeanor.

Smoking Policy

Smoking is not permitted in any classroom or other enclosed facility which any student is required to occupy or which is customarily occupied by non-smoking students.

Drug-Free Campus

Los Angeles Pierce College adheres to, supports, and is in full compliance with requirements that maintain our college as a drug-free institution of higher education.

Standards of Conduct

On September 5, 1990, the Board of Trustees adopted the following standards of conduct:

Students and employees are prohibited from unlawfully possessing, using or distributing illicit drugs and alcohol on district premises, in district vehicles, or as part of any activity of the Los Angeles Community College District.

Additionally, on April 20, 1989, the District Board of Trustees adopted Rule 9803.19, which prohibits:

Alcohol and Drugs

Any possession of controlled substances which would constitute a violation of Health and Safety Code section 11350 or Business and Professions Code section 4230, any use of controlled substances, the possession of which are prohibited by the same or any possession or use of alcoholic beverages while on any property owned or used by the District or colleges of the District. "Controlled substances," as used in this section, include, but are not limited to the following drugs and narcotics:

a. opiates, opium and opium derivatives
b. mescaline
c. hallucinogenic substances
d. peyote
e. marijuana
f. stimulants and depressants
g. cocaine

The board's policy on the Drug-Free Workplace, adopted on March 22, 1989 restates these prohibitions.

Legal Sanctions

Federal laws regarding alcohol and illicit drugs allow for fines and/or imprisonment. Other legal problems include the loss of driver's license and limitations of career choices.

Health Risks

Health risks associated with the abuse of controlled substances include malnutrition, damage to various organs, hangovers, blackouts, general fatigue, impaired learning, dependency, disability, and death. Both drugs and alcohol may be damaging to the development of an unborn fetus.

Other Risks

Personal problems include diminished self-esteem, depression, alienation from reality, and suicide. Social problems include loss of friends, academic standing, and co- and extra-curricular opportunities, alienation from and abuse of family members, and chronic conflict with authority. Economic problems include loss of job, financial aid eligibility, homes, savings, and other assets.

Counseling, Treatment and Rehabilitation

Students should contact the student Health Center or the campus Counseling Office for assistance and referrals; employees should contact the Los Angeles Community College District Employee Assistance Program.

Disciplinary Action

Violation of the above Board Rule shall result in student discipline, imposed in accordance with the Student Discipline Procedures as stated in Board Rule 91101. Discipline includes warning, reprimand, disciplinary probation, suspension or termination of financial aid, suspension, withdrawal of consent to remain on campus, expulsion subject to reconsideration and permanent expulsion. Furthermore, institutional policies and practices may impose disciplinary sanctions on students and employees consistent with local, state, and federal law, up to and including expulsion, termination of employment, and referral for prosecution for violations of the standard of conduct.

The Los Angeles Community College District is committed to drug- and alcohol-free campuses, and we ask you to share in this commitment and dedication.

Student Right to Know

Los Angeles Pierce College in compliance with the Federal Students Right to Know and Campus Security Act of 1990 provides campus crime statistics in the college schedule of classes.

Student Discipline Procedures

Community college districts are required by law to adopt standards of student conduct along with applicable penalties for violation (Education Code Section 66300). The Los Angeles Community College District has complied with this requirement by adopting Board Rule 9803, Standards of Student Conduct. The purpose of this Board Rule is to provide uniform procedures to assure due process when a student is charged with a violation of these standards. All proceedings held in accordance with these procedures shall relate specifically to an alleged violation of the established Standards of Student Conduct.

These provisions do not apply to grievance procedures, student organization councils and courts, or residence determination and other academic and legal requirements for admission and retention. Disciplinary measures may be taken by the College independently of any charges filed through civil or criminal authorities, or both.

Copies of the Student Discipline Procedures are available in the Office of the President or the Student Services Office in the Campus Center.

Student Grievance Procedures

The purpose of the Student Grievance Procedures is to provide a prompt and equitable means for resolving student grievances. The procedures enumerated in Administrative Regulation E-55 shall be available to any student or applicant for admission, who believes a College decision or action has adversely affected his or her status, rights, and/or privileges as a student. The procedures shall include, but not be limited to, alleged violations of Title IX of the Higher Education Amendments of 1972 (and applicable regulations), grievances relating to disabled students as defined by Section 504 of the Rehabilitation Act of 1973, grievances relating to sexual harassment as defined in the District's Sexual Harassment Policy, problems relating to financial aid, and grievances relating to course grades to the extent permitted by Education Code Section 76224(a). Section 76224(a) provides:

"When grades are given for any course of instruction taught in a community college district, the grade given to each student shall be the grade determined by the instructor of the course and the determination of the student's grade by the instructor, in the absence of mistake, fraud, bad faith, or incompetency, shall be final."

For additional information regarding the procedures for filing a student grievance, or for copies of the adopted Student Grievance Procedures, contact the Office of the President or the Student Services Office in the Campus Center.

Ombudsperson

Pursuant to the Student Grievance Procedure, the College Ombudsperson has been appointed by the College President to assist the student in obtaining informal resolution of a grievance. If an informal resolution is not obtained, the Ombudsperson will help the student prepare a case and present it to the Grievance Hearing Committee.

Each student shall make a reasonable effort to resolve a concern on an informal basis prior to requesting a grievance hearing. If an informal resolution is not obtained, the Dean of Student Services will arrange for the formation of a Grievance Hearing Committee according to District Administrative Regulation E-55. Information concerning the Ombudsperson may be obtained in the Student Services Office located in the Campus Center.

Financial Aid

Goal

The purpose of financial aid is to provide access to various types of post-secondary education for those who otherwise would be unable to start or continue their schooling and/or training. Through grants, part-time employment, scholarships, and loans, needy students are provided monetary assistance to meet the basic cost of educational expenses.

What is Financial Aid?

Financial aid is monies made available by federal and state governments and private sources in the form of grants, employment, scholarships, and loans. These monies are available to make it possible for students to continue their education beyond high school even if they and their family cannot meet the full costs of the postsecondary school they choose to attend. The basis for such programs is the belief that parents have the primary responsibility of assisting their dependents to meet educational costs and that financial aid is available only to fill the gap between a family's contribution and the student's yearly academic expenses.

How To Apply

A student must complete a Free Application for Federal Student Aid (FAFSA).

Applications are available in the Financial Aid Office at the College.

Who Can Apply?

To be considered for financial aid, a student must meet the following minimum requirements:

1. Students applying for financial aid must have a high school diploma, or have proof of passing a high school equivalency test. Students who do not have a high school diploma, a General Equivalency Diploma, or a Certificate of California Proficiency, must take an independently administered test. Tests are administered in the Assessment Center. An appointment to take the test can be made by calling (818) 719-6499. Students must pass all segments of the test to qualify for financial aid.
   Students who have successfully completed a two-year program (minimum 48 units) that is acceptable for full credit toward a bachelor's degree have the recognized equivalent of a high school diploma.
2. Be a U.S. citizen or an eligible non-citizen. An eligible non-citizen is a U.S.permanent resident who has an I-151, I-94, or I-551 (Alien Registration Receipt document) from the Immigration and Naturalization Service verifying that their stay in the U.S. is for other than a temporary purpose, or an I-688 card for amnesty. (I-688A cards are ineligible for Title IV aid, but are eligible for state aid.)
3. Show that they have financial need.
4. Be making satisfactory academic progress in a regular course of study.
5. Must not be in default on a Perkins Loan (formerly National Direct Student Loan), Stafford Loan (formerly Guaranteed Student Loan), or Supplemental Student Loans (SLS) at any school the student has attended.
6. Must not owe a refund on a Pell Grant, Supplemental Educational Opportunity Grant (SEOG) or State Student Incentive Grant (SSIG).
7. Be registered with the Selective Service if required to do so.

When To Apply

Beginning on January 1 preceding the school year in which the student enrolls. Example: Beginning January 1, 1994, for the enrollment period between July 1, 1994 and June 30, 1995.

FINANCIAL AID DEADLINE DATES FOR THE 1994-95 SCHOOL YEAR:

FEDERAL FINANCIAL AID DEADLINE	May 1, 1995
STATE CAL GRANT DEADLINE	March 2, 1994

Determining Financial Need

The number and amount of financial awards and payments are subject to availability of institutional, federal, and state aid funds. The type of aid and amount received will be determined by the Financial Aid Office. Financial aid awards are based on demonstrated financial need which is the difference between allowable educational expenses and the total of the parents' expected contribution, and/or the student's own resources. Resources may include, but are not limited to, employment earnings, veteran's benefits, Social Security benefits, or parents' contribution. Resources are then measured against the institutional student expense budget to determine legitimate financial need. Resources are determined from the financial aid application submitted by the student.

Financial Aid Programs

GRANTS

Pell Grant

The Pell Grant is a federally funded program. To be eligible, an applicant must be an undergraduate student and demonstrate financial need. Grants range from $200 to $2400 per academic year for Los Angeles Community College District students. The amount of the award, as determined by the Pell Grant Program, is in most cases based on prior calendar year income and asset information provided in the financial aid application.

Supplemental Educational Opportunity Grant (SEOG)

The SEOG program is a federal program designed to supplement other sources of financial aid for students with exceptional need. SEOG awards range upward from $200 to $500 per year. SEOG is available for as long as it takes to complete the first undergraduate degree within the time frame coinciding with the Financial Aid Satisfactory Progress Standards. When students apply for financial aid, they will automatically be considered for this program based on eligibility requirements and packaging policies.

Board of Governor's Grant (BOGG)

The California Community Colleges offers a Board of Governors Grant (BOGG) to help low income students pay the enrollment fee. Students must meet the California residency requirements as determined by the Admission and Records Office. The BOGG is a grant program and does not require repayment. BOGG applicants do not have to be enrolled in a specific number of courses and it pays the enrollment fees for the academic year and summer sessions. Please see "Enrollment Fee Assistance" for further information.

State Government Grants

The State of California, through the California Student Aid Commission, sponsors grant programs for undergraduate students. To qualify for any of the state-funded grants, a student must be a California resident and be attending (or plan to attend) an eligible school or college in California. To apply for these grants, a student must complete a Free Application for Federal Student Aid (FAFSA) by March 2 prior to the academic year in which the student intends to enroll.

Cal Grants

A student can receive only one Cal Grant, either Cal Grant A, B, or C.

- Cal Grant A

Although this grant is used at a four-year college, students are encouraged to apply for one while attending a community college. CAL GRANT A helps low and middle income students with tuition costs. Grant winners are selected on the basis of financial need and grade point average.

Students who qualify for a grant and who want to attend a public community college can have the Student Aid Commission hold their award until they transfer to a four-year college, but not for more than two years, provided that the student continues to qualify financially.

To be eligible for a new (first-time) CAL GRANT A, a student may not have completed more than six semesters or nine quarters of college study, and must be enrolled for at least 6 units of course work.

- Cal Grant B

This grant provides a living allowance for entering college freshman who come from very low income families. Because this grant is intended for students who would be unable to attend college without such help, CAL GRANT B awards are available only for students who have completed no more than one semester of full-time college work (16 semester units or 24 quarter units). At a community college grants can range from $500 to $1410 per academic year. Students must be enrolled in at least 6 units to be eligible.

- Cal Grant C

This grant is intended for students who desire to train for specific occupations, vocations or technical careers, but who do not have the financial resources to enter training programs because they are from low to middle income families.

Grants are limited to $530 at community colleges for programs ranging in length from four months to two years. Students must be enrolled in at least 6 units.

Bureau of Indian Affairs (BIA) Grants

BIA Grants provide money to help defray the costs of education for students of American Indian heritage. Students may apply if they:

1. are at least one-quarter American Indian, Eskimo, or Aleut, as certified by the BIA and/or tribal group services by the BIA;
2. have financial aid eligibility and scholastic ability;
3. are working toward an undergraduate or graduate degree;
4. have completed all of the requirements.

Amounts of the grants vary according to individual agencies of the BIA. The BIA Grant is advantageous because, unlike other grants, it may be used to replace the loan or work portion of the financial aid package.

Applications are available through the U.S. Department of Interior, Bureau of Indian Affairs, Education Branch, 2800 Cottage Avenue, Sacramento, CA, 95813.

EMPLOYMENT

College Work Study Program (CWS)

The CWS program is a Federal program which enables a student to earn part of his or her financial aid award through on-campus employment. The work varies with the student's course of study and experience.

LOANS (Monies which must be repaid)
Perkins Loan
(Formerly National Direct Student Loan NDSL)

This loan is a long term loan repayment program to help students with exceptional need meet their educational expenses. A Perkins Loan is available to students who also hold a Bachelor's Degree as long as they haven't previously borrowed the program maximum.

Repayment of the Loan: Repayment status begins nine months after the borrower graduates, withdraws, or drops below six units.

Stafford Loan Program
(Formerly the Guaranteed Student Loan Program)

The Stafford Loan Program is based on financial need. The federal government pays the interest while the student is enrolled at least half-time in an eligible educational institution and for a six month grace period afterwards.

These loans are available through participating banks, savings and loan associations, and credit unions to California residents or non-residents who will attend a Los Angeles Community College and also, to California residents who attend institutions outside of California for the period of enrollment in school. The loans are guaranteed by the State of California and insured by the federal government. In order to apply, applicants must submit a Stafford Loan Application as well as a Free Application for Federal Student Aid (FAFSA). To be eligible, a student must be enrolled in at least 6 units for the entire loan period. Repayment begins six months after a student ceases being a half-time student, withdraws, or graduates from school.

The school which the applicant will attend must certify Part B of the Stafford Loan Application before it is submitted to the lender.

Emergency Loans

Most colleges within the Los Angeles Community College District offer limited emergency loan funds to students who face temporary financial emergencies. Contact the college Financial Aid Office for information about the availability of these loans.

Standards for Satisfactory Academic Progress for Financial Aid Programs

In accordance with the Higher Education Act of 1965, as amended, the Financial Aid Office of Los Angeles Pierce College establishes the following Standards for Progress. These standards apply to all students who receive financial aid through the following programs:

Federal Pell Grant

Federal Supplemental Educational Opportunity Grant (FSEOG)

Federal Work Study (FWS)

Federal Perkins Loan

Federal Family Education Loans (FFEL)

Cal Grants B and C

Note: The Board of Financial Aid Programs (BFAP), established to help needy students pay the California Community College enrollment fee are specifically omitted from the above list. As long as a student is eligible to enroll under the college's satisfactory progress provisions, BFAP's may apply, regardless of the student's status under these provisions.

Federal regulations require that the standards applied to students receiving financial aid continue to apply even during periods when the students are not receiving aid. Previous coursework earned at any college within the Los Angeles Community College District (LACCD) is reviewed for compliance within the standards set forth in this policy.

Once initial eligibility is established, subsequent satisfactory progress reviews consider only academic performance at the institution providing aid, with the exception of the 72-unit limit. Classes taken by students under a consortium agreement are included in satisfactory progress review by the school that processes their financial aid.

GENERAL REQUIREMENTS

Students receiving financial aid must be enrolled in a course of study leading to an AA degree, an AS degree, a certificate, or units taken for credit that count towards a degree upon transfer to a four-year institution.

SATISFACTORY ACADEMIC PROGRESS DEFINED

- Completion of the number of units for which the student was paid, minus a 3-unit leeway *(See Determining Enrollment Status-below)*
- Maintenance of a 2.0 cumulative GPA

DETERMINING ENROLLMENT STATUS

In determining whether or not a student is making satisfactory progress, the student's enrollment status is defined as follows:

- If the student receives a full-time Pell Grant, the student's enrollment status is full time.
- If the student receives a three-quarter time Pel Grant, the student's enrollment status is three-quarter time.
- If the student receives a 1/2-time Pell Grant, a Federal Stafford Loan, Cal Grant, FWS, a Federal Perkins Loan, or FSEOG, the student's enrollment status is half time.

In all enrollment status categories, students must maintain a 2.0 (C average) cumulative grade point average (GPA).

By the end of each academic year, financial aid students must complete the units for which they received aid, within 3 units. For example:

- Full time students, who are responsible for 24 units per academic year, must complete at least 21 of those units.
- Three-quarter time students, who are responsible for 18 units per academic year, must complete at least 15 of those units.
- Half time students, who are responsible for 12 units, must complete at least 9 of those units.
- The 3-unit leeway does not apply to students attending less than half time during the academic year. Such students are responsible for completing all units enrolled in when the first disbursement was made.

In the determination of enrollment status, students may count units being taken concurrently at another college if a consortium agreement is made between the two schools with one institution designated as the primary school (the one from which the student receives financial aid). The other school is considered to be the secondary school. If the student is enrolled at a community college and a four-year school, the four-year college must be the primary school.

MAXIMUM TIME LENGTHS

Federal regulations require that institutions establish a maximum time period, or unit total, for financial aid students to complete their educational goals. With the exception of the short-term programs listed below, students enrolled at this college who are planning to obtain an AA or an AS degree, or a certificate, or are transferring to a 4-year school are limited to a maximum of 72 total units, or the equivalent of six (6) full-time semesters. Exceptions are made only when the requirements of a student's educational program cause them to exceed the limit. (See Appeal Procedure for Reinstatement of Financial Aid.)

SHORT LENGTH CERTIFICATE PROGRAMS

Some certificate programs at the Los Angeles Community Colleges may be completed in less time than an AA or AS degree. The following list shows the usual completion and maximum times for various certificate programs:

Units required for the Certificate Program	Normal Length	Maximum Length
10 to 24	2 semesters	3 semesters
25 to 36	3 semesters	4 semesters
37 to 48	4 semesters	5 semesters

To be eligible for financial aid, a program must be at least 6 months in length.

Students who are planning to obtain an AA or AS degree, or transfer to a four-year school in addition to their enrollment in a certificate program, may continue to qualify for financial aid for 72 units, six (6) full-time semesters, or the equivalent.

GRADING POLICY, COURSE LIMITATIONS

When applying these standards for progress, the Financial Aid Office follows the policies of the college as described in the school's catalog. In particular:

- In calculating units completed, only those classes passed with an A, B, C, D, or Cr count as completed classes.
- Classes in which the student receives grades of F, NC, INC, P, and W are not counted as completed classes.
- Students do not receive credit for classes in which they previously received an A, B, C, or Cr unless the catalog specifically states that the class may be repeated for credit.
- Students may receive financial aid for ITV classes if they are concurrently enrolled and the ITV classes do not exceed 50% of total units. ITV classes are only considered for payment when they are completed and the grades are posted.

FINANCIAL AID PROBATION AND DISQUALIFICATION

Academic progress for financial aid students is determined before the first disbursement of aid for each academic year and before the first disbursement of aid after a probationary semester.

Probation

Students who fail to meet the standards at any LACCD college are on probation at all colleges within the LACCD. At the point of initial review, applicants who have one semester in which their progress was sub-standard are placed on probation. Students who fail to meet the standards of satisfactory progress **may** be permitted additional aided probationary semesters in which to meet the standards, i.e., students on probation who have made **measurable improvement**, but who have failed to achieve the minimum standards of satisfactory progress, may be granted additional aided probationary semesters. This is determined by using professional judgment on a case-by-case basis. Students are notified by mail of their probationary status.

Disqualification

Applicants with two or more semesters of sub-standard progress are disqualified and must go through an appeal process if they wish to be reconsidered for financial aid.

Disqualified students are notified by mail concerning the number of units and/or grade points they are deficient, and the procedure for making up the deficiency, or for petitioning for financial aid reinstatement.

Note: Students who first received aid in 1987-88 or later, who do not achieve a cumulative GPA of 2.0 or better by the end of the second academic year **must be disqualified.** The second academic year **is defined as a period of time** and is not a function of the level of enrollment. All other standards for satisfactory progress are reviewed and met in order to continue eligibility.

APPEAL PROCEDURE FOR REINSTATEMENT OF FINANCIAL AID

Students may appeal for reinstatement or continuation of financial aid as long as they are eligible to enroll at the college. Generally, appeals fall into one or two categories, such as:

- To apply for reinstatement after disqualification due to a unit deficiency or failure to maintain a 2.0 cumulative GPA, the student must fill out a Petition for Reinstatement of Financial Aid. The petition must be submitted with an Educational Plan completed by a counselor. Such requests are reviewed by the Financial Aid Appeal Committee. Reinstatement may be granted for documented medical problems, family emergencies, and other circumstances beyond the student's control. Typically, the student whose petition is denied must make up the unit or GPA deficiency without financial aid before being reconsidered for reinstatement. After making up the deficiency, the student must submit a new Petition for Reinstatement. If a student disagrees with the decision of the Appeal Committee, the student may request a review by the Dean of Student Services.
- Students may request an extension of financial aid beyond the 72 unit limit. Students who are accepted into the Nursing program and enrolled in program coursework are automatically granted extensions. Students who have completed 72 units or more at the start of the academic year may apply for an extension. A Petition for Extension of Financial Aid accompanied by a educational plan completed by a counselor may be submitted to the Financial Aid office. Petitions for Extension are reviewed by the Financial Aid Appeal Committee. If students disagree with a decision of the Appeal Committee, a student may request a review of the decision by the Dean of Student Services. If a Petition for Extension is granted, students will be paid only for the classes included on their educational plan.

FRAUD

Students who attempt to obtain financial aid by fraud are suspended from financial aid for unsatisfactory conduct. The college reports such cases to local law enforcement agencies, to the California Student Aid Commission, and/or to the Federal Government. Full restitution of financial aid is required when obtained through fraud.

Business Office

All student finances are handled through the Business Office. Services available are: collection of fees for enrollment, non-resident, audit, parking, and ASO. The Business Office also processes child development payments, RTD passes, stamps and theater tickets. Grant checks are distributed by this office and repayment collected for returned checks.

Child Development Center Child Care

The Child Development Center provides care and innovative programs for children, ages 2.9 to 5.9 years, whose parents are enrolled in 6 units or more at Pierce. The Center is open Monday through Friday from 8 a.m. until 4 p.m. Children may be enrolled in an all-day session 8 a.m.-4 p.m.; a morning session 8 a.m.-12 p.m.; or an afternoon session 12 p.m.-4 p.m. A nominal fee is charged and prorated on the basis of family size and income. Some subsidized care is also available.

The Center is staffed by professional teachers specifically trained in Early Childhood Education. The Center offers opportunities for parents to better understand their child's behavior. The Center is also an instructional lab site for observers and practicum students from Pierce and other colleges.

The Center is located on the west side of Winnetka Avenue, just north of Victory Boulevard. For information and an application contact the Child Development Center Office, (818) 719-6494.

College Safety and Police Services

The College Police are responsible for safety on campus. Please report traffic accidents, injuries, thefts, items lost and found, or any unusual circumstances to the College Police. They are located in College Police 5300, adjacent to the Men's Gym. The Police are on campus twenty-four hours a day, seven days a week.

All lost and found items shall be turned in to the police. Students losing items may claim them at this office. Please report any lost or stolen items.

Parking lots are patrolled for your protection by the Student Patrol and College Police. Please lock vehicle and do not leave anything of value visible. Valuables should be locked in the trunk or left with College Police.

Students will need to seek outside assistance for any vehicle problems such as, keys locked in vehicles, out of gas, and dead batteries.

The College Police issue citations for parking illegally and for traffic violations. Please observe all Parking and Traffic Regulations as posted. Citations are a minimum of $25. A citation for parking in a handicapped zone without a permit is $330. All citations are payable to L. A. Pierce College. Also, be aware of tow away zones. All unpaid citations are sent to the D.M.V. for Registration hold; penalties are added. Be sure to read the current schedule of classes for specific parking and safety rules.

Dogs are not allowed on campus with the exception of guide dogs for the blind. Skateboards, roller skates, and roller blades are not permitted on campus.

Counseling Services

The Counseling Department assists students in making decisions regarding educational, career, and personal concerns. Counseling is available for Educational and Career Planning, and personal and crisis problem situations. These services are provided by professional counselors. Counseling services may be obtained through individual and group counseling and advisement, short-term classes, workshops, reference materials, referrals to resources on or off campus, and through the use of testing (and referral to reference) materials. Counseling can assist individuals to assess interests, abilities, and values; to set goals; and to make plans to accomplish the goals.

Educational Planning and Counseling - Counselors assist students in setting educational goals, exploring alternatives, making decisions regarding their academic programs and understanding the effects of having made these decisions. Short-term courses are also offered to help students develop skills in such areas as decision making and personal development. Counselors are located in the main Counseling Office in the Administration Building. Appointments may be made in the Counseling Office.

Faculty advisors, located in most departments, will also help students with academic and career information related to courses and programs in the academic area of the advisor.

Personal Counseling - Personal counseling may be obtained from counselors in the Counseling Office or at the WoMen's Center. In addition, a Help Center, staffed by counselors, is available to students who feel a need for short-term help with personal problems in a crisis situation. Assistance may be provided through a limited number of individual counseling sessions and referrals. For an appointment go to the Counseling Center, located in the Administration Building.

Career/Transfer Center - The Career Services provided are individual appointments, personal development classes and workshops in career planning and job seeking skills for those persons undecided about their career or educational goals. A library of occupational information, including a computerized career information system, is available. The Career Center is located in the Administration Building.

The Transfer Services provide students with the opportunity to personally meet and discuss transfer plans with university representatives. Information on admissions, financial aid and scholarships, housing, and university campus tours is available. Students may obtain applications for California State University, University of California, and other colleges at appropriate times.

Vocational Rehabilitation Services - Students who have a physical, emotional, or other disability which handicaps them vocationally may be eligible for the services of the State Department of Rehabilitation.

These services include vocational counseling and guidance, training (including payment of college costs), and job placement. Under certain circumstances students may also qualify for help with medical needs, living expenses and transportation and other services.

For further information appointments may be made with a counselor in the **Special Services Office.**

Veterans Advisement - Veterans Advisement is available to all veterans and veteran dependents who desire to use their benefits. The Veterans Office is in BUNG 0342.

Study Abroad Program - Los Angeles Community Colleges offer a unique opportunity to study in a foreign country while earning college credit. Students interested in obtaining further information should contact the Counseling Office.

Disabled Students Programs and Services

Students with physical or learning disabilities are offered a wide range of services including registration, special parking and counseling. These services are also available to students with a temporary disability such as injury or post-operative recuperation. All services and equipment are provided free of charge to any qualifying disabled student.

Deaf and learning disabled students are offered additional services including special classes, tutoring and computer-assisted instruction.

The Disabled Students Office is located in the Administration Building, room 1024. The Office is open Monday through Friday from 7:30 a.m. until 4:30 p.m.

The following special services are offered:

- Interpreter services for the deaf
- Notetaking services
- Mobility assistance
- Specialized tutoring
- Registration assistance
- Special parking areas
- On-campus transportation
- Academic and career guidance
- Special equipment including:
  - talking calculator
  - print magnifier
  - specially adapted computers

Extended Opportunity Program and Services

Extended Opportunity Program and Services (EOPS) is a state-funded comprehensive support system which recruits and assists qualified low-income students with educational disadvantages. EOPS provides academic counseling, career exploration, tutoring, priority registration, book grants, and workshops aimed at helping students succeed in college. Participants must be full-time students.

EOPS is located in BUNG 0340. Office hours are 8 a.m. to 4 p.m., Monday through Friday.

Food Services

Cafeteria. The Cafeteria Building, which is located next to the Campus Center, has full cafeteria service in the Grill Room featuring breakfasts and hot grilled lunch items. The main line Dining Room serves hot entrees, a sandwich deli, soup, fresh salad bar, and pastry. Cafeteria Hours: 6:45 a.m. to 9 p.m., Monday through Thursday and 6:45 a.m. to 2:15 p.m. on Friday.

Vending Machines. Located at various locations on campus. Serving hot and cold drinks, sandwiches, fruit and other miscellaneous snack items. Change machines are available in various vending machine locations.

Information or problems with any or all services, call (818) 719-6412 from 7 a.m. to 2 p.m., Monday through Friday.

Health Services

A variety of health services are available in the Student Health Center located in the Campus Center. The center provides first aid, crisis intervention, health assessment, health counseling, health referrals, and health information. Students are welcome to drop in or call ext. 270 for an appointment to see a physician, the college nurse, or a nurse practitioner.

Consultation and/or referral regarding personal and emotional problems affecting a student's educational progress are available through the Student Health Center or the Help Center in the Counseling Office.

It is strongly urged that an identifying emblem be worn by persons with any medical problems or allergies. Students with known physical impairments must limit enrollment to courses in which they may participate with safety.

Students are encouraged to obtain a medical insurance plan. A commercial student sickness and accident plan is available through the Student Health Center and the Office of Student Activities in the Campus Center. A dental and optometry plan is also available. Information and applications for plans may be obtained in the Student Health Center or Office of Student Activities.

Students who need medical assistance when the Student Health Center is closed should contact the Campus Police at ext. 450.

Physical Education majors, Nursing majors, and all students participating in competitive sports are required to have a physical examination which may be given by their own private physician. A record is kept on file in the respective departments.

Instructional Media Center

The Instructional Media Center is located on the ground floor of the Library. Utilizing cassette tapes, students may receive supplemental instruction in the areas of social science, languages (English, speech, and foreign languages), music, science, drama, office administration, history, accounting, economics, cooperative education, and lectures in various other disciplines. In addition, instructional materials such as filmstrips, records, slide-tape programs and videotapes are available for faculty. The Instructional Media Center offers the service of duplicating instruction-related cassettes for home use for faculty, subject to Media Center regulations. Students are encouraged to supplement their study in the various subject fields by utilizing the services of the Media Center.

The Learning Center

The Learning Center provides services to improve student productivity in the classroom. The services include tutoring in a variety of disciplines. Workshops are given in Study Skills, ESL Conversation and Writing, and Basic Reading and Writing. A monthly lecture series is given covering topics such as "The Term Paper", "Speed Reading", and "How to Study for Finals".

The Learning Center has a Computer-assisted Instructional Laboratory and computers available for student use. An Audio Center and VCR Center are also available. Students are encouraged to visit The Learning Center to take advantage of the services offered. The Center is located on the ground floor of the Library and the services are free to Pierce College students. The Learning Center is open Monday through Thursday, 9 a.m. to 9 p.m. and Friday, 9 a.m. to 2 p.m.

Learning Disabilities Program

The Learning Disabilities Program, located in the Disabled Students Office, assists college students with the essential tools needed for success in their classes. Many students need help in basic reading, spelling and arithmetic skills as well as individualized special techniques for the realization of their full potential academically or vocationally.

The student's problems are diagnosed, and an individual program is designed to meet their needs. Students advance at their own rate using a large variety of instructional materials. Special classes and tutorial sessions provide assistance. Specialized tutoring in regular classes can be provided by arranging for individualized adaptations with instructors.

Scholarships

Both on-campus and off-campus scholarship announcements are posted in the EOPS Office, BUNG 0340. Applications are available to qualified students. New scholarship announcements are received weekly. Deadlines for scholarships are announced in the Pierce Bulletin.

Student Employment and Housing Services (Job Placement)

Employment - Students seeking employment are encouraged to use the STUDENT EMPLOYMENT SERVICE (JOB PLACEMENT). The office is well known in the business community and employers are constantly placing job orders for skilled and non-skilled employment opportunities in diverse occupational fields. Referrals are available to all enrolled students and graduates, for part-time, full-time, temporary and summer work.

Housing - The office maintains a listing of room and board opportunities in nearby private homes in exchange for work or for rent, as well as sharing situations with other students. Occasionally, houses and guest houses are available. The college does not inspect accommodations which are listed and assumes no responsibility.

Work Permits - Work permits for students under 18 years of age may be obtained from the office.

Location - The STUDENT EMPLOYMENT SERVICE is located in BUNG 0342.

Student Store

Pierce College's Student Store is located in the center of the campus next to the Library. The store is a meeting place and an adjunct to both the academic and social life of the campus. It is an academically oriented resource, where the need for and interest in reading and study engendered in the classroom can be nurtured and reinforced. The store is also a social focal point on the campus, offering many goods and services required by a multi-varied college community.

Pierce College's Student Store is owned and operated by the Los Angeles Community College District, under policies set down by the Board of Trustees.

The purpose of Pierce College's Student Store is to provide for the sale of book and supply requirements connected with the academic programs of the college. The Student Store is operated on sound business principles in the anticipation that its income will cover both its operating expenses and its attributable capital development costs.

Veterans Services

Veterans applying for educational benefits are responsible for knowing the VA eligibility requirements and regulations. In addition, they must meet the school admission requirements and supply the college with copies of **official transcripts from previous training.** Applications for VA educational benefits, as well as additional information, may be obtained from the Veterans Administration or the staff in our Veterans Office. The VA requires that students consult the school's veterans counselor to determine transferable credits before starting their second semester at Pierce.

Programs at this college are approved for payment by the Veterans Administration through the Council of Private Postsecondary Education. The VA authorizes Pierce to offer only the Associate Degree to students collecting benefits. To receive payment when repeating a class, students must obtain approval from the school's veterans counselor.

Educational Benefits - Veterans attending under the provisions of Public Law 94-502 receive payments at the prevailing rates. A copy of the law is posted in the Veterans Office. Checks received during the month cover the previous month's attendance.

Overpayment to Veterans - The Veterans Administration holds veterans liable for overpayment received for reasons including failure to notify the VA and the Veterans Office when they drop a class or receive an incomplete grade. Veterans who receive overpayment should promptly notify the VA and the Veterans Office in BUNG 0327N. The VA allows only 30 days from the start of the semester for veterans collecting benefits to add or drop classes.

Credit for Military Service - Pierce College grants up to six units of credit for military service. Credit may also be granted for some classes at special military schools. Granting of credit for these elective units is based on veterans' compliance with the following guidelines:

1. Current enrollment.
2. Having served at least 181 days in the armed services.
3. Presenting a copy of military separation paper (DD214) when petitioning for elective credit.

Tutoring - Veterans may apply to the Veterans Administration for reimbursement of tutorial services. Such reimbursement is limited to 12 months, and based on approval arranged through the Veterans Office.

60-Unit Rule - When nearing 60 units of college courses, the VA requires veterans to meet with the veterans counselor. After evaluation, the counselor must submit a letter to the VA before the student is authorized to continue beyond 60 units.

WoMen's Re-entry/Resource Center

General Programs - The WoMen's Resource Center is available to provide personal and academic counseling, weekly support groups, seminars, and lectures for men and women interested in adapting to challenges in their lives. A primary focus is to assist individuals who are returning to pursue educational objectives after a long absence from school. The Center can be particularly helpful in locating resources and providing assistance to all students, including free legal advice, small grants and emergency loans for books, and scholarships for returning women.

The WoMen's Resource Center is located in the brown trailer on the main mall adjacent to the Cafeteria patio. Office hours: 9 a.m. - 3 p.m. Monday, Wednesday, Thursday and 9 a.m. - 6 p.m. Tuesday.

STUDENT ACTIVITIES

Co-Curricular Activities

Co-Curricular or extra class activities are intended to provide students with the opportunity to be better prepared to fulfill the duties of citizenship in a democratic society and enrich their educational and personal development. This may be accomplished through extra class cultural activities, volunteer programs related to the instructional program, community-related affairs, athletics, and student government. Students, in learning to work with groups, will develop proficiencies that will prepare them for cooperative and meaningful associations in both occupational and personal pursuits.

The development of a student activity program is a vital portion of the obligations that both faculty and administrators assume for students in any American college community. At Pierce, student activities are an integral part of the educational program.

Intercollegiate Athletics and Eligibility

Intercollegiate Athletics are an integral part of the total college program. Men and women compete in the Western States Conference in all sports. The sports offered for men are baseball, football, swimming, tennis, volleyball and water polo. The sports offered for women are softball, swimming, tennis, volleyball, and basketball.

Eligibility

All questions pertaining to athletic eligibility should be directed to the Athletic Director or college administrator responsible for Athletics.

Publications

College Newspaper

The college newspaper is published as a learning experience, offered under the college journalism instructional program. The editorial and advertising materials published by the newspaper, including any opinions expressed, are the responsibility of the student newspaper staff. Under appropriate state and federal court decisions these materials are free from prior restraint by virtue of the First Amendment to the United States Constitution. Accordingly, materials published, including any opinions expressed, should not be interpreted as the position of the Los Angeles Community College District, the College, or any District or College officer or employee.

Journalism students produce the award-winning College newspaper, the Roundup, which is published weekly and distributed free to all students. This newspaper contains news of the entire College, both day and evening. Also, journalism students produce a magazine, The Bull, which is distributed free to all students.

Student Government

The Dean of Student Services represents the Faculty and the Administration of the college as sponsor and advisor of the Associated Student Organization. For information on becoming involved, please visit the Student Services Office in the Campus Center.

Associated Students Organization (ASO)

The students of Pierce manage their own affairs through the organization known as the Associated Students Organization (A.S.O.). Each person who enters the college may become a member. The Associated Student Organization provides a framework for all college student activities. Through active participation in such activities as student government, clubs, publication, athletics, and special events of the college, the student renders service, increases social and cultural awareness, improves leadership abilities, and creates a close association with other students. Students are encouraged to serve on campus and A.S.O. committees. For information visit the Student Services Office in the Campus Center.

Qualifications for ASO Officers (Administrative Regulation E-22)

Administrative Regulation E-22 pertains to elected Associated Student Organization (ASO) officers, officers appointed to elected positions and heads of ASO Standing Committees.

Administrative Regulation E-22 does not apply to clubs, club representatives, ASO special committees and all-college committees.

Administrative Regulation E-22

A student cannot be a candidate for ASO office if he or she has served more than four semesters in a student government elected and/or appointed office, or in any office or position where he or she voted on the expenditure of ASO funds in any college.

1. An officer may serve a fifth semester if he or she is eligible at the time of assuming office (e.g., has served three semesters and is a candidate for an office with a one-year term).
2. Ten weeks or more of student service in office or service anytime after the tenth week, will be counted as a full semester.

All students running for office or voting for the student officers must be paid members in good standing in the Associated Students Organization at the college where the election is being held.

A student officer or a candidate for office must be actively and continuously enrolled, attending and successfully completing classes in a minimum of nine units (Day Students), or six units taken solely in the evening and/or on Saturday (Evening Students), with a cumulative and current GPA of 2.0 at the College during the semester in which the student government office is applied for or held. All units must be taken at the college where the office is sought or held. Student officers reducing units below the required number will be required to forfeit their student offices. Unit checks will be made to assure that students maintain eligibility at least every five (5) weeks.

A candidate for student office must have a cumulative grade-point-average of 2.0 or better for all college work completed within the past two years and the number of "W" units must not exceed the number of units completed during that two-year period.

NOTE: Individual colleges, in their ASO constitutions may set forth standards for office which are higher than those listed above. Pierce requires a GPA of 2.5.

Student Clubs & Organizations

Approximately 30 campus clubs and organizations have open membership to students who are members of the Associated Student Organization. Service clubs, special interest clubs, department- related organizations, and religious clubs offer a variety of opportunities for student involvement.

The club program is coordinated by the Associated Student Organization through the A.S.O. Senate. Clubs which have been active at Pierce during the past semesters include: Alpha Gamma Sigma; Animal Health Technology; Arabic Cultural Club; Association for Computing Machinery; Bible Fellowship Club; California Nursing Students Association; Dance Club; English Circle; Indo-PAK; International Students Club; Kabataang Filipino; LAGOS; Latter Day Saint Student Association; Muslim Student Association; Phi Beta Lambda; Phi Theta Kappa; Pierce Hillel; Pre-Vet Club; Sign Language Club; Students for Athletics; Transducers; United African-American Student Association; and Vietnamese Club.

Information on clubs is available in the Associated Student Office or Student Services Office in the Campus Center.

Student Trustee Election Procedure

The Los Angeles Community College District conducts an election annually whereby each student in the District has an opportunity to be involved in the process of selecting a student representative to the Los Angeles Community College district Board of Trustees.

The process contained in Regulation E-78 provides for a thorough evaluation of the candidates' qualifications and insures an equal opportunity for any individual from any District college campus to seek the position of student representative to the Los Angeles Community College District Board of Trustees.

In accordance with existing law, candidates for Student Trustee must:

1. Be residents of the District.
2. Be currently enrolled at a District college.
3. Be enrolled in at least 5 units.
4. Plan to continue as a District resident and enrolled as a District student through the one-year term of office.
5. Have completed a minimum of 12 units.

For further information, contact the Student Services Office in the Campus Center.

International Students Program

International education and the education of students from abroad is a major undertaking of the Los Angeles Community Colleges. Through the exchange of teachers and students, the District seeks to foster mutual respect and understanding for the diversity of cultures, languages, and ideas of the people of the world. The college extends a warm welcome to all students regardless of race, language, sex, nationality, religion, or political ideology.

All students coming from abroad are urged to contact the International Students Office as soon as they decide to study at Pierce College. Admission requirements for international students are different from those for resident students and students are encouraged to call or write for the application package.

The address is as follows:

International Students Office
Los Angeles Pierce College
6201 Winnetka Avenue
Woodland Hills, CA 91371

A counselor is available to assist international students with academic, career, personal, or immigration issues. A calendar of social activities is planned for international students each semester which includes theater parties, camping trips, visits to local points of interest, holiday parties, and regular "rap" sessions designed to encourage the discussion of a wide range of issues and concerns.

Although the college does not have any dormitories, students can receive assistance in locating suitable housing through the International Students Transition Program.

ASSOCIATE DEGREE PROGRAMS

Graduation Requirements

The Board of Governors of the California Community Colleges has authorized the Los Angeles Community College District Board of Trustees to confer the degrees of Associate in Arts and Associate in Science.

The awarding of an Associate Degree symbolizes a successful attempt on the part of the College to lead students through patterns of learning experiences designed to develop certain capabilities and insights. Among these are the ability to think and to communicate clearly and effectively both orally and in writing; to use mathematics; to understand the modes of inquiry of the major disciplines; to be aware of other cultures and times; to achieve insights gained through experience in thinking about ethical problems; and to develop the capacity for self-understanding. In addition to these accomplishments, the student should possess sufficient depth in some field of knowledge to contribute to lifetime interest.

Continuing students should follow the graduation requirements in the catalog in effect at the time of their initial enrollment. A continuing student is one who has completed a minimum of one course per calendar year.

Students who interrupt their attendance, except as noted above, become subject to any new requirements which are in effect at the time they re-enroll.

I. **Unit Requirement.** 60 to 64 units of course credit in selected degree applicable courses. One credit hour of community college work is approximately three hours of recitation, study, or laboratory work per week throughout a term of 16 weeks.

II. **Scholarship Requirement.** A "C" (2.0) grade average or better in all degree applicable courses attempted.

III. **Competency Requirement.** Students must demonstrate competence in reading, in written expression, and in mathematics. The following courses and examinations are approved to meet the competency requirement for the associate degree as defined in Board Rule 6201.12:

A. The competency requirement in reading and written expression may be met by:

1. Completion of English 101 (or its equivalent at another college) with a grade of "C" or better.
   Or
2. A grade of "C" or better in English 28 and a passing score on the English competency exam (not the same as the Assessment Test).

B. The competency requirement in Mathematics may be met by:

1. Completion of one of the following courses (or its equivalent at another college) with a grade of "C" or better. **Mathematics** 113 & 114, 115, 116, 146, 147 or any higher level mathematics course with a prerequisite of Mathematics 115 or its equivalent. **Computer Technology** 60 (570); **Electronics** 10, 12, 14; **General, Engineering Technology** 121; **Engineering Technology** 49, 50, 51; **Statistics** 1.
   Or
2. Achievement of a score of 15 or higher on the District Mathematics Competency Examination.

IV. **Residence Requirement.** Completion of at least 12 degree applicable units of work in residence and attendance at the College during the semester in which the graduation requirements are completed. Exceptions may be made under special circumstances.

V. **Course Requirements.** Students who are majoring in programs of study for which 18-35 units are required in the major shall complete Graduation Plan A. Students who are majoring in programs of study for which 36 or more units are required in the major shall complete Graduation Plan B.

Campus Procedure

Completing the Associate Degree

1. Students who desire an AA or an AS degree must file a petition to graduate no later than the beginning of the semester prior to the one in which they expect to complete the requirements. (See Schedule of Classes Calendar page for exact dates.)
2. Students must designate which plan they are using to obtain the degree. The choice should be based on these guidelines:
   a. Choose Plan A if courses have been chosen to prepare for transfer to a four-year college or university OR if courses have been chosen to obtain a two-year general studies education.
   b. Choose Plan B if courses have been chosen to complete those listed in one of the two-year occupational programs shown in another section of this catalog or if planning to transfer to a four-year institution as an engineering major.
3. Restrictions Under Plan A
   A student must show at least 36 CSU-transferable units in the 60 units required regardless of the transfer institution to which the student will transfer.
4. Substitution of Graduation Requirements
   In unusual or special circumstances it is possible to petition for substitution of major requirements as well as general education graduation requirements. Graduation requirements are never waived, only substitutions are considered. Situations in which petitioning might be appropriate include course requirements that are not currently being offered at Pierce or substitution of more advanced courses for lower level requirements due to previous technical experience in a particular area. Petitions for Substitution of Graduation Requirements are available in the Graduation Office.

NOTE: The following limitations apply to Graduation Plan A or B.

1. A student may not use more than two courses taught in any department in order to satisfy General Education Requirements. (See Departmental Organization listed in the back of this catalog.)

2. A student may not duplicate disciplines (for example, History 11 from B, 1, with History 3 from B, 2) in selecting courses to meet the requirements in each of the sections of B, D, and E.
3. While a course might satisfy more than one general education requirement, it may not be counted more than once for these purposes. It may be counted again for a different degree requirement as determined by the College.

Graduation Plan A

Major Requirements: At least 18 semester units of study taken in a single discipline or related disciplines.

General Education Requirements: Successful completion of at least 30 semester units of general education which shall include not less than the minimum number of units indicated in each of the following areas:

A. *Natural Sciences* — Minimum 3 semester units. Agriculture 103, 511, 711, 712, 901, 940, 950; Anthropology 101; Astronomy 1, 3; Biology 3, 6, 10, 25, 39; Botany 1; Chemistry 40, 45, 51, 60, 101; Computer Science 570, 585; Electronics 2, 4, 6, 8; Environmental Science 1, 2, 7, 18; Geography 1, 3, 9, 17; Geology 1, 4, 10, 11; Meteorology 3; Oceanography 1, 10, 12; Physical Science 1, 4, 5; Physics 6A, 11A, 12, 37; Physiology 1, 8, 9; Psychology 2.

B. *Social and Behavioral Sciences* — Minimum of 9 semester units in the following pattern:

1. *At least 3 units in American Institutions to be met in U.S. History, or Political Science, or U.S. Ethnic History or Political Science.
   History 11-13, 41, 42, 52; Political Science 1, 30.
2. *At least 3 units in other Social Sciences to be met in Anthropology, Economics, Ethnic Studies, Geography, History, Political Science, Psychology, Sociology, or other Social Science courses.
   Anthropology 102, 103, 112, 132, 141; Business 1, 5, 6; Economics 1, 2, 10; Environmental Science 17; Geography 2, 5, 10, 14; History 3-6, 8, 15, 20, 21, 27, 30, 40, 50; Journalism 100 (replaces 5 and 12); Management 31, 33; Office Administration 70; Political Science 2, 7, 14, 35; Psychology 1, 3, 6, 11, 13, 14, 16, 18, 42, 51, 52; Sociology 1-3, 6, 7, 13, 17, 18, 28; Spanish 10, 26; Supervision 2, 6.
3. *At least 3 additional units from 1 or 2 above.

*Note: No more than one course per discipline in the 12 units.

C. *Humanities* — Minimum 3 semester units.
American Sign Language 1-4,40; Anthropology 104 (same as Linguistics 1), 105, 121, 123; Art 101-103, 111, 201, 400, 500-502, 506, 614, 700, 706, 708, 721, 805; Cinema 3, 18; English 102, 203-208, 211-216, 239, 240, 250, 252, 270; French 1-4; German 1-4; History 1, 2, 7; Humanities 1, 6, 11-14, 30, 31, 60, 61, 88, 89; Italian 1-4; Japanese 1-4, 8, 27; Linguistics 1 (same as Anthropology 104); Music 101, 111, 121, 122, 152,181-184, 201-203, 321-324, 411-414, 501, 531, 561, 601-604, 611-614, 621, 624, 651, 705, 721, 741, 745, 755; Philosophy 2-4, 12, 19, 20, 22, 24, 25, 86; Photography 10, 27B; Sociology 11, 15; Spanish 1-4, 8, 12, 15, 25, 27; Speech Communication 130; Theater Arts 100, 105, 110, 115, 125, 130, 265, 270, 300, 400.

D. *Language and Rationality* — Minimum 12 semester units in the following pattern:

1. *English Composition — at least 3 semester units.
   English 28, 101; Journalism 101, 108; Office Administration 31, 32.
2. *Communication and Analytical Thinking — at least 6 semester units in Mathematics, Logic and Critical Thinking, Speech Communication, Computer Literacy and/or Computer Languages.
   Accounting 1, 21; Agriculture 211; Business 38; Computer Science 501, 504, 506-508, 513, 575; Electronics 10, 12, 14; Mathematics 115, 116, 125, 145, 146, 215, 227, 230, 235, 236, 238, 239, 240, 245, 255, 260, 261; Office Administration 77; Philosophy 6, 7, 9, 201; Psychology 26; Sociology 4; Speech Communication 101, 103, 104, 121, 122; Statistics 1; Supervision 11.
3. *At least 3 additional units from 1 or 2 above.

*Note: No more than one course per discipline in the 12 units.

E. *Health and Physical Education* — Minimum 3 semester units in the following pattern:

1. Health Education — 2-3 units
   Health 9, 10, or 11 — 2 units minimum. Graduates of the Nursing program are deemed to have met the health education requirement. Students who have served in the Armed Service of the United States for a minimum of one year are also exempt.
2. Physical Education Activity — 1 unit
   Any activity course chosen from Physical Education 100 through 600 or Physical Education 90A, 90B, 91, 96, 666, 690 or 702. Authorized Physical Education activity exemptions include:
   a. Medical exemption
   b. By petition

Ethnic Studies courses will be offered in at least one of the required areas.

Graduation Plan B

Major Requirements: At least 36 semester units of study taken in a single discipline or related disciplines.

General Education Requirements: Successful completion of at least 18 semester units in general education which shall include not less than the minimum number of units indicated in each of the following areas:

A. *Natural Sciences* — Minimum 3 semester units.
Agriculture 103, 511, 711, 712, 901, 940, 950; Anthropology 101; Astronomy 1, 3; Biology 3, 6, 10, 25, 39; Botany 1; Chemistry 40, 45, 51, 60, 101; Computer Science 570, 585; Electronics 2, 4, 6, 8; Environmental Science 1, 2, 7, 18; Geography 1, 3, 9, 17; Geology 1, 4, 10, 11; Meteorology 3; Oceanography 1, 10, 12; Physical Science 1, 4, 5; Physics 6A, 11A, 12, 37; Physiology 1, 8, 9; Psychology 2.

B. *Social and Behavioral Sciences* — Minimum 3 semester units.
History 11-13, 41, 42, 52; Political Science 1, 30.

C. *Humanities* — Minimum 3 semester units.
American Sign Language 1-4, 40; Anthropology 104 (same as Linguistics 1), 105, 121, 123; Art 101-103, 111, 201, 400, 500-502, 506, 614, 700, 706, 708, 721, 805; Cinema 3, 18; English 102, 203-208, 211-216, 239, 240, 250, 252, 270; French 1-4; German 1-4; History 1, 2, 7; Humanities 1, 6, 11-14, 30, 31, 60, 61, 88, 89; Italian 1-4; Japanese 1-4, 8, 27; Linguistics 1 (same as Anthropology 104); Music 101, 111, 121, 122, 152, 181-184, 201-203, 321-324, 411-414, 501, 531, 561, 601-604, 611-614, 621, 624, 651, 705, 721, 741, 745, 755; Philosophy 2-4, 12, 19, 20, 22, 24, 25, 86; Photography 10, 27B; Sociology 11, 15; Spanish 1-4, 8, 12, 15, 25, 27; Speech Communication 130; Theater Arts 100, 105, 110, 115, 125, 130, 265, 270, 300, 400.

D. *Language and Rationality* — Minimum 12 semester units in the following pattern:

1. Three semester units in English Composition
   English 28, 101; Journalism 101, 108; Office Administration 31, 32.
2. Six semester units in Communication and Analytical Thinking.
   Accounting 1, 21; Agriculture 211; Business 38; Computer Science 501, 504, 506-508, 513, 575; Electronics 10, 12, 14; Mathematics 115, 116, 125, 145, 146, 215, 227, 230, 235, 236, 238, 239, 240, 245, 255, 260, 261; Office Administration 77; Philosophy 6, 7, 9, 201; Psychology 26; Sociology 4; Speech Communication 101, 103, 104, 121, 122; Statistics 1; Supervision 11.

E. *Health and Physical Education* — Minimum 3 semester units in the following pattern:

1. Health Education — 2-3 units
   Health 9, 10, or 11 — 2 units minimum. Graduates of the Nursing program are deemed to have met the health education requirement. Students who have served in the Armed Service of the United States for a minimum of one year are also exempt.
2. Physical Education Activity — 1 unit
   Any activity course chosen from Physical Education 100 through 600 or Physical Education 90A, 90B, 91, 96, 666, 690 or 702. Authorized Physical Education activity exemptions include:
   a. Medical exemption
   b. By petition

Ethnic Studies courses will be offered in at least one of the required areas.

NOTE: While a course might satisfy more than one general education requirement, it may not be counted more than once for these purposes. It may be counted again for a different degree requirement as determined by each college.

A course may meet a general education requirement for the Associate Degree and also partially satisfy a general education requirement at the California State University.

EDUCATIONAL PROGRAMS

Associate Degree Programs

These programs are designed to give the student job skills to use for employment purposes and to provide an Associate Degree upon the successful completion of a two year occupational program.

Occupational Certificate Programs

These programs are composed of the main job skill courses found in the comparable Associate Degree program. A Certificate of completion will be awarded upon successful completion of the courses in any certificate program. A grade of "C" or better is required in each course.

	Associate Degree	Certificate
Agriculture —		
Floral Design and Management	AS	C
General Agriculture	AS	C
Horse Science	AS	C
Horticulture —		
General Horticulture	AS	C
Greenhouse and Nursery Industry	AS	C
Landscape Installation and Maintenance Industry	AS	C
Landscape Planning and Design	AS	C
Professional Gardening		C
Natural Resources Management	AS	
Pre-Veterinary Science	AS	
Veterinary Technician	AS	
American Sign Language (Interpreter for the Deaf)	AA	
Architecture —		
Architecture Technology	AA	C
Construction Technology	AS	C
Art		
Graphic Design	AA	
Technical Illustration —		
Commercial	AA	
Industrial	AA	C
Business Administration —		
Accounting	AA	C
General Business	AA	
Management and Supervision	AA	C
Marketing	AA	C
Real Estate	AA	C
Computer Science —		
Programming for Business	AA	C
Programming for Microcomputers and Small Business Systems		C
Programming for Computer Science	AS	C
Computer Technology		C
Electronics —		
Digital Option		C
Communications Option		C
Analog Option		C
Electronics Technology Option	AS	
Engineering Technology Option	AS	
Industrial Technology —		
Automotive Service Technology	AS	C
Drafting — Mechanical	AA	C
Engineering Technician	AS	
General —		
Option I	AS	
Option II	AS	C
Machine Shop Technology	AA	C
Numerical Control Programming	AS	C
Quality Control —		
Option I	AS	C
Option II	AS	C
Welding —		
Option I	AA	C
Option II	AA	C
Journalism	AA	C
Nursing	AA	
Office Administration —		
Professional Secretary	AA	C
Legal Office Procedures*	AA	C
General Administrative	AA	C
Photojournalism	AA	C
Pre-Engineering	AS	
Theater —		
Costume Option	AA	
Technical Theater Option	AA	

*Not currently offered.

Academic Program

Fine Arts	AA
Latin American Studies	AA
Music	AA
Pre-Engineering	AS
Religious Studies	AA
Spanish	AA
Theater	AA

DEPARTMENTS' OCCUPATIONAL PROGRAMS

Agriculture Department

- Floral Design and Management
- General Agriculture
- Horse Science
- Horticulture
  - General Horticulture
  - Greenhouse and Nursery Industry
  - Landscape Installation and Maintenance Industry
  - Landscape Planning and Design
- Natural Resources Management
- Pre-Veterinary Science
- Veterinary Technician

Art Department

- Architecture Technology
- Construction Technology
- Graphic Design
- Technical Illustration — Commercial
- Technical Illustration — Industrial

Business Administration Department

Accounting
General Business
Management and Supervision
Marketing
Real Estate

Computer Science and Information Technology Department

Programming for Business
Microcomputers and Small Business Systems
Programming for Computer Science
Computer Technology

Earth Science/Physics Department

Pre-Engineering

Electronics Department

Electronics
Digital Option
Communications Option
Analog Option
Electronics Technology Option
Engineering Technology Option

Industrial Technology Department

Automotive Service Technology
Drafting — Mechanical
Engineering Technician
Industrial Technology, General (Option I and II)
Machine Shop Technology
Numerical Control Programming
Quality Control (Option I)
Quality Control, Non-Destructive Evaluation (Option II)
Welding (Option I and II)

Interdisciplinary Program

Religious Studies

Media Arts Department

Journalism
Photojournalism

Modern Languages Department

American Sign Language
Latin American Studies
Spanish

Music Department

Music

Nursing Department

Nursing

Office Administration Department

Professional Secretary
Legal Office Procedures
General Administrative

Theater Department

Theater
Theater — Costume Option
Theater — Technical Theater Option

Student Responsibility

The suggested sequence of subjects in each program is the most desirable to follow; but the order may be changed, if necessary, as long as prerequisites are met. It is the student's responsibility to meet course prerequisites and graduation requirements. The general education and physical education requirements for the Associate Degrees are listed in previous sections of this catalog.

Students planning to transfer units to bachelor degree programs should consult a counselor to verify requirements.

AGRICULTURE – FLORAL DESIGN AND MANAGEMENT

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to prepare a person as a floral designer, flower shop manager or owner. The program has been developed through an advisory committee of floral designers, cut flower business persons, and Pierce College faculty.

AREA A – CORE PROGRAM

		UNITS
*Agri 701	Retail Floral Design and Practices I	2
*Agri 702	Retail Floral Design and Practices II	2
*Agri 703	Retail Floral Design and Practices III	2
*Agri 704	Advanced Retail Floral Design and Practices	2
Agri 708ABC	Floristry Projects	6

**These courses must be taken in sequence.*

AREA B – MAJOR ELECTIVE

Students select related courses approved by the department.
Suggested courses include, but are not limited to the following: Acctg 1, Agri 209, 711 or 712, 756, 760-762, 764, Art 201, 501, Bus 5, Mgmt 13 — 28

AREA C – GENERAL EDUCATION

Units selected from College Catalog to meet graduation requirements. See Plan B. — 18

Certificate Program

This program teaches students the flowers and plants in Southern California used primarily in the florist trade. In laboratory work the student learns corsage making, flower arrangements, funeral offerings, and the use of plastic flowers.

Lectures include shop management, buying, and salesmanship. Upon completions of the certificate program, the student is qualified to be employed in a flower shop.

REQUIRED COURSES

		UNITS
*Agri 701	Retail Floral Design and Practices I	2
*Agri 702	Retail Floral Design and Practices II	2
*Agri 703	Retail Floral Design and Practices III	2
*Agri 704	Advanced Retail Floral Design and Practices	2
Agri 708ABC	Floristry Projects	6

**These courses must be taken in sequence.*

ELECTIVES

	UNITS
Students select related courses approved by the department. Suggested courses include, but are not limited to the following: Acctg 1, Agri 209, 711 or 712, 756, 760-762, 764, Art 201, 501, Bus 5, Mgmt 13	16

AGRICULTURE — GENERAL AGRICULTURE

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to give students a broad background to prepare them for many different occupations in the field of agriculture and agricultural business.

AREA A – REQUIRED MAJOR CLASSES

		UNITS
Agri 103	Introduction to Soils	3
Agri 501	Principles of Animal Science	3
Agri 714	Principles of Horticulture	3
Agri 901	Natural Resources Conservation	3
ANY	100 Series Class	3
ANY	500 Series Class	3
ANY	600 Series Class	3
ANY	700 Series Class	3
ANY	800 Series Class	3
CoSci 530	Microcomputer Application Software	3

AREA B – MAJOR ELECTIVES

Additional classes should be selected from any Agriculture courses. 20

AREA C – GRADUATION GENERAL EDUCATION REQUIREMENTS

See catalog for requirements. 17

Certificate Program – Total 39 units

		UNITS
Agri 103	Introduction to Soils	3
Agri 501	Principles of Animal Science	3
Agri 714	Principles of Horticulture	3
ANY	500 Series Classes	6
ANY	600 Series Classes	3
ANY	700 Series Classes	3
ANY	800 Series Classes	6
ANY	Business Classes	9
CoSci 530	Microcomputer Application Software	3

AGRICULTURE — HORSE SCIENCE

Associate in Science Degree

Associate Degree programs do not necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to prepare students for a variety of jobs in the horse industry and is molded around a core of horse science, agriculture, and general education courses. Extensive practical experience and field trips to many horse facilities in and near Los Angeles County complement the academic portion of the program.

AREA A – CORE COURSES

		UNITS
[1]Agri 103	Introduction to Soils	3
Agri 601	Horse Production	3
Agri 602	Horse Husbandry	3

AREA B – REQUIRED MAJOR

Agri 501	Principles of Animal Science	3
Agri 505	Animal Nutrition	3
Agri 510	Animal Health and Disease Control	3
[1]Agri 511	Anatomy and Physiology of Animals	3
Agri 603	Equine Management Techniques	10
Agri 611	Farrier Science	2
Agri 620	Basic Equitation	1
Agri 621	Horseback Riding Laboratory	1
Agri 630	Beginning Equine Training	2
Agri 631	Advanced Equine Training	2
Agri 650	Equine Health and First Aid	2

AREA C – MAJOR ELECTIVES

Select from any of the Agri 100, 200, 300, 500 or 600 series courses. 10

AREA D – GENERAL EDUCATION

See Plan B. 20

Certificate Program

		UNITS
Agri 501	Principles of Animal Science	3
Agri 505	Animal Nutrition	3
Agri 510	Animal Health and Disease Control	3
Agri 511	Anatomy and Physiology of Animals	3
Agri 601	Horse Production	3
Agri 602	Horse Husbandry	3
Agri 620	Basic Equitation	1
Agri 621	Horseback Riding Laboratory	1
Agri 630	Beginning Equine Training	2
ANY	Agri 100, 500 or 600 series courses	6

[1]*Meets General Education Requirements, Plan B, Part A.*

AGRICULTURE — HORTICULTURE

HORTICULTURE — GENERAL

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

AREA A – CORE PROGRAM

		UNITS
[1]Agri 103	Introduction to Soils	3
[1]Agri 711	Botany for Horticulture	4
Agri 714	Principles of Horticulture	3
Agri 800	Plant Identification and Use I	3
Agri 840	Introduction to Pest Management	3
Agri 896A-C	Horticulture Projects A-C	1-6

AREA B – REQUIRED COURSES

Agri 716	Arboriculture I (Care of Trees and Shrubs)	1
Agri 742A	Practicum in Horticulture A	1
Agri 756	Greenhouse Plant Production	3
	or	
Agri 757	Plant Propagation	3
Agri 760	Indoor Plant Care and Maintenance I	1
Agri 808	Residential Landscape Design	3
Agri 812	Landscape Installation and Maintenance I	3

AREA C – MAJOR ELECTIVES

Select from 700 or 800 series courses or other courses as approved by the Department. 7

AREA D – GENERAL EDUCATION

See Plan B 15

[1]*Meets General Education Requirements, Plan B, Part A.*

HORTICULTURE -- GREENHOUSE AND NURSERY INDUSTRY

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

AREA A – CORE PROGRAM

		UNITS
[1]Agri 103	Introduction to Soils	3
[1]Agri 711	Botany for Horticulture	4
Agri 714	Principles of Horticulture	3
Agri 800	Plant Identification and Use I	3
Agri 840	Introduction to Pest Management	3
Agri 896A-C	Horticulture Projects A-C	1-6

AREA B – REQUIRED COURSES

		UNITS
Agri 112	Fertilizers and Plant Nutrition	3
Agri 716	Arboriculture I (Care of Trees and Shrubs)	1
Agri 742B	Practicum in Horticulture B	1
Agri 756	Greenhouse Plant Production	3
Agri 757	Plant Propagation	3
Agri 760	Indoor Plant Care and Maintenance I	1
Agri 808	Residential Landscape Design	3
Agri 848	Training for Pest Control License	3

AREA C – MAJOR ELECTIVES

	UNITS
Select from Agri 700 or 800 series courses or other courses as approved by the Department	7

AREA D – GENERAL EDUCATION

	UNITS
See Plan B for specific requirements.	15

[1]*Meets General Education Requirements, Plan B, Part A.*

HORTICULTURE -- LANDSCAPE INSTALLATION AND MAINTENANCE INDUSTRY

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

AREA A – CORE PROGRAM

		UNITS
[1]Agri 103	Introduction to Soils	3
[1]Agri 711	Botany for Horticulture	4
Agri 714	Principles of Horticulture	3
Agri 800	Plant Identification and Use I	3
Agri 840	Introduction to Pest Management	3
Agri 896A-C	Horticulture Projects A-C	1-6

AREA B – REQUIRED COURSES

		UNITS
Agri 112	Fertilizers and Plant Nutrition	3
Agri 716	Arboriculture I (Care of Trees and Shrubs)	1
Agri 722	Care of Horticulture Equipment I	1
Agri 808	Residential Landscape Design	3
Agri 812	Landscape Installation and Maintenance I	3
Agri 815	Blueprint Reading and Cost Estimating	2
Agri 818	Basic Construction Techniques	3
Agri 820	Irrigation Design and Installation	3
Agri 822	Turf and Groundcover Management	3
Agri 848	Training for Pest Control License	3

AREA C – MAJOR ELECTIVES

	UNITS
Select from 700 or 800 series courses or other courses as approved by Department.	7

AREA D – GENERAL EDUCATION

	UNITS
See Plan B for specific requirements.	15

[1]*Meets General Education Requirements, Plan B, Part A.*

HORTICULTURE -- LANDSCAPE PLANNING AND DESIGN

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

AREA A – CORE PROGRAM

		UNITS
[1]Agri 103	Introduction to Soils	3
[1]Agri 711	Botany for Horticulture	4
Agri 714	Principles of Horticulture	3
Agri 800	Plant Identification and Use I	3
Agri 840	Introduction to Pest Management	3
Agri 896A-C	Horticulture Projects A-C	1-6

AREA B – REQUIRED COURSES

		UNITS
Agri 801	Plant Identification and Use II	3
Agri 802	Plant Identification and Use III	3
Agri 806	Landscape Planning and Design	4
Agri 807	Advanced Landscape Planning and Design	4
Agri 812	Landscape Installation and Maintenance I	3
Agri 815	Blueprint Reading and Cost Estimating	2
Agri 818	Basic Construction Techniques	3
Agri 820	Irrigation Design and Installation	3
Agri 822	Turf and Ground Cover Management	3

AREA C – MAJOR ELECTIVES

	UNITS
Select from Agri 700 or 800 series courses or other courses as approved by the Department	4

AREA D – GENERAL EDUCATION

	UNITS
See Plan B for specific requirements.	15

[1]*Meets General Education Requirements, Plan B, Part A.*

HORTICULTURE -- CERTIFICATE PROGRAMS

These programs are designed to prepare a student for employment in the field of horticulture. Individuals are prepared for employment by various private companies in the horticulture industries, governmental agencies, or to become self-employed. These programs may also serve as continuing education for those already employed in some field of horticulture. Students with a casual interest in horticulture desiring to take classes for information and interest are also accepted.

Basic Certificate – 30 units

Certificate of Gardening. Any 30 units selected from courses identified as horticulture courses as approved by the Department. Various other courses may be substituted on approval of the Department.

Advanced Certificates – 50 units

Professional Horticulturist
Greenhouse and Nursery Management
Landscape Planning and Design
Landscape Maintenance Management
Turf and Irrigation Management
Pest Management and Plant Protection

Meet all requirements of the Degree Program except the College Graduation General Education Requirements.

AGRICULTURE – NATURAL RESOURCES MANAGEMENT

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

The Natural Resources Management Program at Pierce College is designed to provide students with a two-year Associate Science Degree. Courses are oriented and designed to give students practical outdoor skills and experience which are necessary in resource management today. Included are techniques of native shrub and tree identification, propagation, planting, and management; soil profile study; resource data collection techniques; basic land measurement skills; and topographic map/aerial photo interpretation. Independent study, projects, and work experience are encouraged. Emphasis is placed on acquainting the student with government resource management agencies and their associated career areas.

REQUIRED CLASSES

		UNITS
[1]Agri 103	Introduction to Soils	3
Agri 181 A-D	Field Work A-D	
	or	
Agri 185, 285, 385	Directed Study	1-4
[1]Agri 711	Botany for Horticulture	4
Agri 901	Natural Resources Conservation	3
Agri 902	Natural Resources Laboratory	1
Agri 905	Introduction to Outdoor Recreation	2
Agri 940	Introduction to Forest Management	2
Agri 950	Introduction to Wildlife Management	2
Agri 960	Wildland Fire Science	2
Agri 975	California Native Plants	3
Biology 10	Natural History I	4
Geology 1	Physical Geology	3

MAJOR ELECTIVES PART A

(Minimum of 10 units)		UNITS
Agri 906	Outdoor Recreation Management Laboratory	1
Agri 920	Natural Resource Construction Techniques	2
Agri 930	Maps/Aerial Photos	2
Agri 931	Natural Resources Measurement	2
Agri 941	Forest Management Laboratory	1
Agri 942	Urban Forestry	2
Agri 944	Global Forestry	2
Agri 951	Wildlife Management Laboratory	1
Agri 961	Wildland Fire Science Laboratory	1
Agri 970	Range Management	3
CoSci 530	Microcomputer Application Software	3

MAJOR ELECTIVES PART B

(Minimum of 7 units)		UNITS
Agri 716	Arboriculture I (Care of Trees and Shrubs)	1
Anthro 103	Archaeology: Reconstructing of Human Past	3
Anthro 132	North American Indians	3
English 22	Technical English	3
Geog 14	Geography of California	3
Geology 10	Introduction to Environmental Geology	3
Geology 11	Introduction to Geology: Our National Parks and Monuments	3
Geology 12	Introduction to the Geology of California	3
Oceano 1	Introduction to Oceanography	3
Speech 101	Oral Communication I	3

GENERAL EDUCATION

	UNITS
See Plan B for specific requirements.	17

[1]*Meets General Education Requirements, Plan B, Part A.*

AGRICULTURE – PRE-VETERINARY MEDICINE

Department Subject Advisor: Dr. Lee Shapiro

PRE-VETERINARY TRACK

The Pierce College Pre-Veterinary Program has an articulation agreement with the U.C. Davis School of Veterinary Medicine. This agreement allows our pre-veterinary students to apply directly to the Veterinary school after completing an AS degree and taking upper division Genetics and Embryology classes at another college. Work with veterinarians is required for admission to Veterinary school, so that students understand the duties and responsibilities of a practitioner. The minimum requirement for animal, veterinary, and biomedical science experience is 180 hours. Experience should include work with large and small animals and a variety of species. Agriculture classes at Pierce College with corresponding laboratory sections are appropriate ways to gain experience even though many are not UC transferrable for credit. We encourage pre-veterinary students to get involved in the laboratory classes with veterinary technology students.

PRE-VETERINARY ACADEMIC TRAINING

		Units
Agri 401	Orientation to Veterinary Science	1
Agri 501	Principles of Animal Science	3
Agri 505	Animal Nutrition	3
Agri 511/512	Anatomy and Physiology	4
	American History/Government	3
Biology 6	General Biology I (Prerequisite college chemistry with laboratory)	5
Biology 7	General Biology II	5
Chem 101	General Chemistry I	5
Chem 102	General Chemistry II	5
Chem 211	Organic Chemistry for Science Majors I	5
Chem 221	Biochemistry for Science Majors	5
English 101, 102, AND ONE ADDITIONAL ENGLISH CLASS		9
	Humanities and Social Sciences	9
Math 227	Statistics	4
Physics 6	General Physics I (Prerequisite Trigonometry)	4
Physiol 1	Introduction to Human Physiology I	4

PRE-VETERINARY EXPERIENTIAL TRAINING

(Choose a combination of courses so that actual laboratory/hands-on time will apply towards the experience)

		Units
Agri 410/411	Animal Nursing I/Laboratory	3
Agri 420/421	Clinical Procedures in Animal Care I/Laboratory	3
Agri 430/431	Veterinary Clinical Pathology/Laboratory	3
Agri 435/436	Veterinary Radiography/Laboratory	3
Agri 441	Large Animal Nursing Laboratory	2
Agri 683	Equine Management Techniques	2
Agri 650	Equine Health and First Aid	2

The Pierce Agriculture Department also offers electives for those veterinary science students who wish to develop particular areas of interest or for anyone who wants to enhance their knowledge of animals.

ELECTIVES (Optional)

Agri 450	Introduction to Animal Facilitated Therapy	1
Agri 460	First Aid for Dogs and Cats	2
Agri 466	Avian Care and Husbandry	1
Agri 505	Animal Nutrition	3
Agri 596	Agricultural Enterprise Projects	10
Agri 601	Horse Production	3
Agri 602	Horse Husbandry	3
Agri 683	Equine Management Techniques	10
Agri 650	Equine Health and First Aid	2

AGRICULTURE – VETERINARY SCIENCES

Department Subject Advisor: Dr. Lisa Eshman

Pierce College offers AS degrees in veterinary technology and pre-veterinary medicine. The program consists of a core of classes and a track system which allows the student to select a major that best suits career goals. The veterinary technology track qualifies a student to take the California State Board Examination to become a Registered Veterinary Technician. Upon completion of the pre-veterinary track, the student has an AS degree in pre-veterinary medicine and may transfer to a four year college or university prior to applying to veterinary school, or, take two additional classes (Embryology and Genetics) and apply directly to veterinary school.

Note: Faculty counseling is available and highly recommended.

The Agriculture Department boasts a variety of animal species on campus, including horses, beef, cattle, sheep, dogs, cats, rabbits, pigs, and llamas. We also have a fine library which complements the Pierce College Library. Our faculty includes a Veterinarian, a Ph.D., a Registered Veterinary Technician, a Registered Small Animal Dietician and Reproductive Specialist, a successful rodeo rider and horse trainer, and other experienced and friendly "animal-people."

VETERINARY TECHNOLOGY TRACK

The Veterinary Technology Track is accredited by the American Veterinary Medical Association. The program is experience oriented with lecture classes complementing hands-on laboratory work. To qualify for this program, the student must complete the following requirements:

1. Show proof of competency for, or completion of Math 115 and English 101
2. Submit a 1-2 page essay describing the experiences in your life that steered you toward a career with animals.
3. Complete the following coursework:
   a. Agri 401
   b. Agri 510
   c. Agri 511 and 512
4. Participate in one semester of kennel duty on campus.
5. Interview with faculty and director.
6. One semester of Agri 181A

After these requirements have been net, the student is then eligible to take the AG 400 classes. The following sequence is mandatory:

1. Math, Chem 51 and Microbiology 20
2. Agri 420/421 and Agri 410/411 must precede Agri 430/431
3. Biology 3 or Micro 20 or veterinary experience must precede Agri 430/431

The remainder of the core and track classes for veterinary technology may be taken in any sequence. The coursework may be completed in 2 years, but most students take longer. Coursework may be taken at other colleges, but content must be equivalent to Pierce courses.

In addition to the classes listed below, there are other requirements in the veterinary technology track. The student must maintain an overall gradepoint average of 2.3 or better, with a grade of "C" or better in all classes. Acquired practical experience in the field for three semesters and the summer following the clinical classes is required. Students enrolled in Agri 420, 421, 422, and 423 must participate in daily kennel duty. Participation in the Veterinary Technology Club is strongly recommended.

CORE CLASSES FOR VETERINARY TECHNOLOGY

		Units
Agri 181	Field Work	3
Agri 401	Orientation to Vet Tech	1
Agri 501	Principles of Animal Science	3
Agri 510	Animal Health & Disease Control	3
Agri 511/512	Anatomy & Physiology of Animals	4
	*See catalog for choices	
English 101	College Reading and Composition I	3
	Health and Physical Education	3
	*Humanities	3
	*Language and Rationality	6
Math 115	Elementary Algebra	5
	*Natural Sciences	3
Off Adm 82	Microcomputer Software Survey in the Office	3
	*Social and Behavioral Sciences	3

VETERINARY TECHNOLOGY TRACK

		Units
Agri 402	Topics in Veterinary Technology	2
Agri 410/411	Animal Nursing I/Laboratory	3
Agri 412/413	Animal Nursing II/Laboratory	3
Agri 420/421	Clinical Procedures I/Laboratory	3
Agri 422/423	Clinical Procedures II/Laboratory	3
Agri 425	Small Animal Veterinary Skills	3
Agri 430/431	Veterinary Clinical Pathology	3
Agri 435/436	Veterinary Radiography/Laboratory	3
Agri 441	Large Animal Nursing Laboratory	2
Agri 480	Clinical Experience for Animal Technicians	9
Biology 3	Introduction to Biology	4
Chem 51	Fundamentals of Chemistry I	5
Micro 20	General Microbiology	4

AMERICAN SIGN LANGUAGE/ INTERPRETING PROGRAM

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to prepare for a career in interpreting for the deaf. Students will be trained in the various aspects of interpreting and upon completion of the program should be prepared to work in the field. As an interpreter one will function as a facilitator between the deaf person and the hearing person.

FALL SEMESTER I		UNITS
A S L 3	American Sign Language III	4
A S L 16	Creative Signing	2
A S L 30	Fingerspelling	1
A S L 40	Introduction to Deaf Culture	3
*English 101	College Reading and Composition I	3
*Gen Ed	General Education	3
SPRING SEMESTER I		
A S L 4	American Sign Language IV	4
A S L 5	Introduction to Interpreting	3
*Anthro 104	Human Language and Communication	
	or	
*Ling 1	Introduction to Language and Linguistics	3
A S L 31	Fingerspelling II	1
*Speech 121	The Process of Interpersonal Communication	
	or	
*Speech 101	Oral Communication I	3
FALL SEMESTER II		
A S L 6	Voice to Sign Interpreting I	4
A S L 10	Sign to Voice Interpreting I	4
A S L 17	Ethics and Professional Standards of Interpreting	3
*Gen Ed	Graduation General Education Requirement	3
SPRING SEMESTER II		
A S L 7	Voice to Sign Interpreting II	4
A S L 11	Sign to Voice Interpreting II	4
A S L 12	Specialized Interpreting	3
*Health 10	Health Education	2
*Phys Ed	Physical Education Activity	1

Electives: A S L 15 (Linguistics for Interpreters), A S L 25 (A S L Lab).

*Fulfills Graduation General Education Requirement.

ARCHITECTURE — ARCHITECTURE TECHNOLOGY

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to prepare students interested in obtaining employment as architectural draftspersons or transferring to schools of Architecture. The program has been developed through an advisory committee of architects, draftspersons, and Pierce College faculty. For General Education Subject Requirements, follow Plan B. If an eventual 4-year degree is considered, be aware of the requirements different from Plan B.

FIRST SEMESTER		UNITS
Arch 1	Introduction to Architecture	1
Arch 5	Architectural Drawing I	3
Arch 9	Elements of Architecture	3
Arch 20	Methods of Construction	2
Arch 41	Architectural Model Building	2
[1,4]Math 145	Technical Mathematics I	3
SECOND SEMESTER		
Arch 6	Architectural Drawing II	3
Arch 21	Materials of Construction	3
Arch 33	Basic Architectural Design I	3
[1,3,5]Math 146	Technical Mathematics II	3
	General Education	3
THIRD SEMESTER		
Arch 7	Architectural Drawing III	3
Arch 22	Equipment of Buildings	3
Arch 34	Basic Architectural Design II	3
[5]English 28	Intermediate Reading and Composition	
	or	
English 101	College Reading and Composition I	3
	[1] Architectural Elective	3
FOURTH SEMESTER		
Arch 8	Architectural Drawing IV	3
Arch 10	Freehand Drawing I	2
Arch 12	Architectural Rendering	2
	Art Elective	3
[6]Health 10	Health Education	2
[6]Phys Ed	Physical Education Activity	1
	General Education	6

[1]*Suggested Electives: Arch 15, 18, 23, 37 (CAD), 52, and Coop Ed.*

[2]*Math 116 or 115 or Math 125 may be substituted.*

[3]*Math 240 may be substituted.*

[4]*Meets General Education Requirements, Plan B, Part D2.*

[5]*Meets General Education Requirements, Plan B, Part D1.*

[6]*Meets General Education Requirements, Plan B, Part E.*

NOTE: CA State Polytechnic Universities, San Luis Obispo and Pomona offer degrees in Architecture and Planning. See a counselor or department advisor for further information.

Certificate Program

For students who wish to complete two classes (minimum) in one year to prepare for employment. A minimum of 37 units is required. Cannot be completed in one academic year.

		UNITS
Arch 1	Introduction to Architecture	1
Arch 5	Architectural Drawing I	3
Arch 6	Architectural Drawing II	3
Arch 7	Architectural Drawing III	3
Arch 8	Architectural Drawing IV	3
Arch 10	Freehand Drawing I	2
Arch 12	Architectural Rendering	2
Arch 20	Methods of Construction	2
Arch 21	Materials of Construction	3
Arch 22	Equipment of Buildings	3
Arch 33	Basic Architectural Design I	3
Arch 34	Basic Architectural Design II	3
Arch 41	Architectural Model Building	2
Math 146	Technical Mathematics II	3

ARCHITECTURE — CONSTRUCTION TECHNOLOGY

Associate in Science Degree

Associate Degree programs DO NOT constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to prepare a person for employment in the field of construction inspection. Courses in building inspection and building supervision for both government and private industry offer many attractive potentials. For Graduation General Education Subject Requirements, follow Plan B.

FIRST SEMESTER		UNITS
Arch 1	Introduction to Architecture	1
Arch 5	Architectural Drawing I	3
Arch 20	Methods of Construction	2
[4]English 28	Intermediate Reading and Composition	3
[2,3]Math 145	Technical Mathematics I	3
	[1]Architectural Elective	3
	Elective	2
SECOND SEMESTER		
Arch 6	Architectural Drawing II	3
Arch 18	Strength of Architectural Materials I	3
Arch 21	Materials of Construction	3
[3]Math 146	Technical Mathematics II	3
	General Education	3
THIRD SEMESTER		
Arch 9	Elements of Architecture	3
Arch 52	Concrete Construction Design and Practice	3
	[1]Architectural Elective	6
	General Education	3
FOURTH SEMESTER		
Arch 22	Equipment of Buildings	3
Arch 23	Construction Estimating	3
Econ 2	Principles of Economics II	3
[6]Health 10	Health Education	2
[6]Phys Ed	Physical Education Activity	1
	General Education	3

[1]*Suggested Elective: Coop Ed; Electrical construction and Electricity classes, Arch 37 (CAD).*

[2]*Math 116 or 115 or Math 125 may be substituted.*

[3]*Math 240 may be substituted.*

[4]*Meets General Education Requirements, Plan B, Part D1.*

[5]*Meets General Education Requirements, Plan B, Part D2.*

[6]*Meets General Education Requirements, Plan B, Part E.*

Certificate Program

Students who wish to complete classes in one year to prepare for employment. A minimum of 32 units is required. Cannot be completed in one academic year.

		UNITS
Arch 1	Introduction to Architecture	1
Arch 5	Architectural Drawing I	3
Arch 6	Architectural Drawing II	3
Arch 9	Elements of Architecture	3
Arch 18	Strength of Architectural Materials I	3
Arch 20	Methods of Construction	2
Arch 21	Materials of Construction	3
Arch 22	Equipment of Buildings	3
Arch 23	Construction Estimating	3
Arch 52	Concrete Construction Design and Practice	3
Econ 2	Principles of Economics II	3
Math 146	Technical Mathematics II	3

ART — FINE ARTS

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students wishing to pursue an Associate in Arts Degree under Graduation Plan B must complete a minimum of 18 units in General Education as required in the College. In addition they must complete a core program of Basic Art Courses, and a program in depth chosen from one of the Art Concentrations listed below. An Associate in Arts Degree in Fine Arts would, therefore, typically include the following:

General Education	18 units
Required Basic Art Courses	18 units
Art Course Concentration	18-21 units
Elective Courses	6-7 units

REQUIRED BASIC ART COURSES:

Art 101, 102, 201, 202, 501, 502 — 18 Units

CERAMIC DESIGN CONCENTRATION

Art 700, 708, 709, 710, 706, 711 — 18 Units

METAL and JEWELRY DESIGN CONCENTRATION

Art 721, 722, 723, 724, 700, 708 — 18 Units

SCULPTURE CONCENTRATION

Art 700, 701, 702, 703, 706, 204 — 18 Units

DRAWING CONCENTRATION

Art 204, 205, 206, 209, 300, 400 — 18 Units

PAINTING CONCENTRATION

Art 300, 304, 204, 209, 305, 205, 400 — 21 Units

FINE ART PHOTOGRAPHY CONCENTRATION

Art 805, 806, 807, 400, 385, Photo 27 — 18 Units

PRINTMAKING CONCENTRATION

Art 103, 400, 401, 403, 405, 407, 409 — 18 Units

Students wishing to survey a variety of traditional art media may elect the following course of study:

SURVEY OF ART COURSES

Art 204, 300, 400, 700, 721, 708 — 18 Units

ART – GRAPHIC DESIGN

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is planned for students who expect to make advertising art or graphic design their vocation. Satisfactory completion of the course of study below leads to the Associate in Arts Degree.

		UNITS
FIRST SEMESTER		
Art 201	Drawing I	3
Art 209	Perspective Drawing I	3
Art 501	Beginning Two-Dimensional Design	3
Art 614	Graphic Communications I	4
	[3]General Education	3
SECOND SEMESTER		
[1]Art 103	Art Appreciation I	3
Art 615	Graphic Communications II	4
Art 620	Illustration I	3
	[3] General Education	6
THIRD SEMESTER		
Art 616	Graphic Communications III	4
Art 621	Illustration II	3
	[2]Art Elective	3
	[3]General Education	6
FOURTH SEMESTER		
Art 617	Graphic Communications IV	4
Art 622	Illustration for the Graphic Artist	3
	[2]Art Elective	3
	[3]General Education	3

[1]*Meets humanities requirement for general education.*

[2]*Six units of art electives chosen from Art 204, 300, 502, 600, 628.*

[3]*See Graduation General Education Requirements.*

ART – TECHNICAL ILLUSTRATION – COMMERCIAL

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is to be taken by Technical Illustration majors with a predominantly Art background. See subsequent page for the Industrial Technical Illustration program.

		UNITS
FIRST SEMESTER		
Art 132	Technical Illustration I	4
Art 501	Beginning Two-Dimensional Design	3
Eng Gen 111	Introduction to Engineering Drafting	3
	[3]General Education	3
	[1]Electives	3
SECOND SEMESTER		
Art 133	Technical Illustration II	4
Art 614	Graphic Communications I	4
	[3]General Education	6
	[1]Electives	3
THIRD SEMESTER		
Art 134	Production Illustration I	4
Art 613	Graphic Design	3
Art 615	Graphic Communications II	4
	[3]General Education	4
FOURTH SEMESTER		
Art 135	Production Illustration II	4
Art 209	Perspective Drawing I	3
[2]Health 10	Health Education	2
	[3]General Education	3
	[1]Electives	3

[1]*Electives: Art 201, 628, 629; Photo 10.*

[2]*Meets Health Education requirement for general education.*

[3]*See Graduation General Education Requirements.*

ART – TECHNICAL ILLUSTRATION – INDUSTRIAL

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is to be taken by Technical Illustration students with a predominantly Drafting background. See the preceding section for the Commercial Technical Illustration program.

		UNITS
FIRST SEMESTER		
Art 132	Technical Illustration I	4
[2]Art 209	Perspective Drawing I	3
Electrn 2	Introduction to Electronics	3
	[4]General Education	3
	[1]Electives	3
SECOND SEMESTER		
Art 133	Technical Illustration II	4
Art 613	Graphic Design	3
Ind Tek 112	Applied Technical Drafting I	4
	[4] General Education	5
THIRD SEMESTER		
Art 134	Production Illustration I	4
Electrn 28	Electronic and Electro-Mechanical Drafting I	2
	[4]General Education	7
	[1]Electives	2
FOURTH SEMESTER		
Art 135	Production Illustration II	4
Ind Tek 130	Technology of Metal Machining Processes I	3
[3]Math 145	Technical Mathematics I	3
	[4]General Education	6

[1]*Electives: Ind Tek 121.*

[2]*Meets Humanities requirement (Part C) for general education.*

[3]*Meets Language/Rationality Requirement (D2).*

[4]*See Graduation General Education Requirements.*

Certificate Program

This program provides specialized training in Technical Illustration. All of these courses may be used to apply toward fulfillment of the requirements for an Associate Degree in Technical Illustration.

		UNITS
Art 132	Technical Illustration I	4
Art 133	Technical Illustration II	4
Art 134	Production Illustration I	4
Art 135	Production Illustration II	4
Art 209	Perspective Drawing I	3
Art 613	Graphic Design	3

AIRBRUSH OPTION
Certificate Program

		UNITS
Art 132	Technical Illustration I	4
Art 201	Drawing I	3
Art 209	Perspective Drawing I	3
Art 614	Graphic Communications I	4
Art 628	Air Brush Techniques I	3
Art 629	Air Brush Techniques II	3

BUSINESS ADMINISTRATION — ACCOUNTING

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to prepare a student for entry into the business community as an accounting clerk or a middle-management trainee. It will provide the educational background for preparing the student to fulfill the needs of business in maintaining records, financial controls, and preparing informational reports for management decision-making processes and for governmental requirements.

Typical Positions: bookkeeper, accounting clerk, assistant auditor, financial analyst, proprietor.

1. Required Area Subjects

		UNITS
[2]Acctg 1	Introductory Accounting I or	5
Acctg 21	Bookkeeping and Accounting I and	
Acctg 22	Bookkeeping and Accounting II	6
Acctg 2	Introductory Accounting II	5
Acctg 15	Tax Accounting I	3
Acctg 17	Payroll Accounting	2
Bus 1	Introduction to Business	3
Bus 5	Business Law I	3
Finance 1	Principles of Finance	3
Mgmt 13	Small Business Management I	3
[1]Off Adm 32	Business Communications	3
Off Adm 82	Microcomputer Software Survey in the Office	3

2. Elective Area Subjects (15 units minimum)

		UNITS
Acctg 20	Managerial Accounting	3
Bus 6	Business Law II	3
Bus 38	Business Computations	3
*Bus 185	VITA - Directed Study	1
*Bus 285	VITA - Directed Study	2
Finance 2	Investments	3
Mgmt 2	Organization and Management Theory	3
Mgmt 33	Personnel Management	3
Market 1	Principles of Selling	3
Market 21	Principles of Marketing	3
Off Adm 1	Typewriting I	3
Supv 1	Elements of Supervision	3
Coop Ed	Work Experience	1-4

3. Additional General Education Requirements (12 units)
See Graduation Plan B

	UNITS
Natural Sciences	3
Humanities	3
Health and Physical Education	3
Social and Behavioral Sciences	3

**Volunteer Income Tax Assistance Courses, TBA.*

[1]Off Adm 32 meets Language and Rationality (D1) General Education requirement.

[2]Acctg 1, 21, Bus 38 or Supv 11 meets Language and Rationality (D2) General Education requirement.

Certificate Program

This program is designed to prepare a student for entry into the business community as an accounting trainee/clerk or for the student who wishes to become a proprietor of a small business. The program provides the minimum educational background for preparing the student in understanding the needs of businesses in maintaining records and financial controls, and preparing financial reports for decision-making.

Typical positions include: accounting clerk/trainee, bookkeeper, auditor/trainee, financial analyst/trainee, small business proprietor.

Required Area Subjects

		UNITS
Acctg 1	Introductory Accounting I	5
Acctg 15	Tax Accounting I	3
Acctg 17	Payroll Accounting	2
Bus 1	Introduction to Business	3
Bus 5	Business Law I	3
Off Adm 32	Business Communications	3
Off Adm 78	Microcomputer Acctg Applications for the Electronic Office	3

Elective Area Subjects (9 units minimum)

		UNITS
Bus 38	Business Computations	3
Finance 1	Principles of Finance	3
Mgmt 13	Small Business Management I	3
Mgmt 31	Human Relations for Employees	3
[1]Off Adm 82	Microcomputer Software Survey in the Office	3
Off Adm 85	Microcomputer Office Applications: Spreadsheet	3

[1]Includes a word processing, spreadsheet and data base program.

BUSINESS ADMINISTRATION — GENERAL BUSINESS

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to provide a broad formal business education for those students thinking of starting their own business. It provides great latitude in course selection to allow students to tailor the program to their goals.

1. Required Area Subjects

		UNITS
[2]Acctg 1	Introductory Accounting I or	5
Acct 21	Bookkeeping and Accounting I and	3
Acctg 22	Bookkeeping and Accounting II	3
Bus 1	Introduction to Business	3
Bus 5	Business Law I	3
[2]Bus 38	Business Computations	3
Mgmt 2	Organization and Management Theory	3
Mgmt 13	Small Business Management I	3
Market 1	Principles of Selling	3
Market 11	Fundamentals of Advertising	3
Market 21	Principles of Marketing	3
[1]Off Adm 32	Business Communications	3
Off Adm 82	Microcomputer Software Survey in the Office	3

2. Elective Area Subjects (17 units minimum)

		UNITS
Acctg 2	Introductory Accounting II	5
Acctg 17	Payroll Accounting	2
Bus 6	Business Law II	3
Finance 1	Principles of Finance	3
Finance 3	Investments	3
Mgmt 6	Public Relations	3
Mgmt 31	Human Relations for Employees	3
Mgmt 33	Personnel Management	3
Market 31	Retail Merchandising	3
Real Es 1	Real Estate Principles	3
Supv 1	Elements of Supervision	3
Supv 6	Labor-Management Relations	3

3. Additional General Education Requirements (12 units)

See Graduation Plan B.

	UNITS
Natural Sciences	3
Humanities	3
Health and Physical Education	3
Social and Behavioral Sciences	3

[1]*Off Adm 32 meets Language and Rationality (D1) General Education requirement.*

[2]*Acctg 1, 21, Bus 38 meets Language and Rationality (D2) General Education Requirement.*

BUSINESS ADMINISTRATION — MANAGEMENT AND SUPERVISION

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to meet the needs of 1) employed persons desiring to prepare for supervisory positions, and 2) supervisors and other management personnel who wish to gain knowledge which will enable them either to perform their duties more effectively or to advance to more responsible positions. This course of study was developed with the assistance of persons from industry and education according to a program recommended by the Bureau of Industrial Education of the California State Department of Education. Those courses applied towards the Supervisory Management Certificate are also applicable for this Degree.

Typical Positions: Various supervisorial and managerial positions in the industrial and commercial community.

1. Required Area Subjects

		UNITS
[2]Acctg 1	Introductory Accounting I	5
Bus 1	Introduction to Business	3
Bus 5	Business Law I	3
Econ 2	Principles of Economics II	3
Mgmt 2	Organization and Management Theory	3
Mgmt 31	Human Relations for Employees	3
Mgmt 33	Personnel Management	3
Market 21	Principles of Marketing	3
[1]Off Adm 32	Business Communications	3
Off Adm 82	Microcomputer Software Survey in the Office	3

2. Elective Area Subjects (18 units minimum)

		UNITS
Acctg 2	Introductory Accounting II	5
[2]Bus 38	Business Computations	3
Finance 1	Principles of Finance	3
Mgmt 6	Public Relations	3
Mgmt 13	Small Business Management I	3
Market 1	Principles of Selling	3
Off Adm 1	Typewriting I	3
Supv 1	Elements of Supervision	3

3. Additional General Education Requirements (12 units)

See Graduation Plan B.

	UNITS
Natural Sciences	3
Humanities	3
Health and Physical Education	3
Social and Behavioral Sciences	3

[1]*Off Adm 32 meets Language and Rationality (D1) General Education requirement.*

[2]*Acctg 1, 21, Bus 38 or Supv 11 meets Language and Rationality (D2) General Education Requirement.*

Certificate Program

This Certificate Program was developed in cooperation with the Business Administration Advisory Committee. It is designed to give a one-year, in-depth exposure to the specialized training for supervisory management personnel. All of these courses may be used to apply toward the fulfillment of the requirements for an Associate in Arts Degree in Supervisory Management.

1. Required Area Subjects

		UNITS
Mgmt 2	Organization and Management Theory	3
Mgmt 31	Human Relations for Employees	3
Mgmt 33	Personnel Management	3
Market 21	Principles of Marketing	3
Off Adm 82	Microcomputer Software Survey in the Office	3
Supv 1	Elements of Supervision	3

2. Elective Area Subjects (12 units minimum)

		UNITS
Bus 1	Introduction to Business	3
Bus 5	Business Law I	3
Finance 1	Principles of Finance	3
Mgmt 6	Public Relations	3
Mgmt 13	Small Business Management I	3
Market 1	Principles of Selling	3

BUSINESS ADMINISTRATION — MARKETING

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is planned to prepare students to enter the broad area of merchandising for the business enterprise. Upon successful completion of this program, the student has a background in the principles and practices involved in the distribution of products and services from producers through middlemen to the ultimate consumer. Careers opened include sales, advertising, purchasing, market research and analysis.

Typical Positions: Retail, wholesale and industrial sales; buyer; merchandising supervision; proprietor.

1. Required Area Subjects

		UNITS
[2]Acctg 1	Introductory Accounting I	5
Bus 1	Introduction to Business	3
Bus 5	Business Law I	3
[2]Bus 38	Business Computations	3
Mgmt 6	Public Relations	3
Mgmt 13	Small Business Management I	3
Market 1	Principles of Selling	3
Market 11	Fundamentals of Advertising	3
Market 21	Principles of Marketing	3
[1]Off Adm 32	Business Communications	3
Off Adm 82	Microcomputer Software Survey in the Office	3

2. Elective Area Subjects (15 units minimum)

		UNITS
Mgmt 2	Organization and Management Theory	3
Mgmt 31	Human Relations for Employees	3
Market 31	Retail Merchandising	3
Off Adm 1	Typewriting I	3
Supv 1	Elements of Supervision	3
Coop Ed	Work Experience	1-4

3. Additional General Education Requirements (12 units)

	UNITS
Natural Sciences	3
Humanities	3
Health and Physical Education	3
Social and Behavioral Sciences	3

[1]Off Adm 32 meets Language and Rationality (D1) General Education requirement.

[2]Acctg 1, 21, Bus 38 or Supv 11 meets Language and Rationality (D2) General Education Requirement.

Certificate Programs

These Certificate Programs were developed in cooperation with the Marketing Advisory Committee. They are designed to provide a one-year, in depth exposure, to fields of Marketing leading to employment. These courses may be used to apply toward the fulfillment of the requirements for an Associate in Arts Degree in Marketing Management.

FIRST SEMESTER (suggested sequence)		UNITS
Bus 1	Introduction to Business	3
Market 21	Principles of Marketing	3
Off Adm 32	Business Communications	3

SECOND SEMESTER (suggested sequence)		UNITS
Market 1	Principles of Selling	3
Market 11	Fundamentals of Advertising	3
Off Adm 82	Microcomputer Software Survey in the Office	3

Electives/General Marketing Certificate (12 units minimum)

		UNITS
Mgmt 2	Organization and Management Theory	3
Mgmt 6	Public Relations	3
Mgmt 13	Small Business Management I	3
Mgmt 31	Human Relations for Employees	3
*Market 31	Retail Merchandising	3
Coop Ed	Work Experience	1-4

**Not offered as a day class.*

BUSINESS ADMINISTRATION — REAL ESTATE

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

The following program was prepared in cooperation with the Pierce College Real Estate Advisory Committee in order to provide a course of study for persons who plan to go into the various aspects of the Real Estate Industry. Those courses applied towards the Real Estate Certificate are also applicable for this Degree.

1. Required Area Subjects

		UNITS
[2]Acctg 1	Introductory Accounting I	5
Bus 1	Introduction to Business	3
Bus 5	Business Law I	3
Market 1	Principle of Selling	3
Real Es 1	Real Estate Principles	3
Real Es 3	Real Estate Practices	3
Real Es 5	Legal Aspects of Real Estate I	3
Real Es 7	Real Estate Finance I	3
Real Es 9	Real Estate Appraisal I	3
Escrow 1	Fundamentals of Escrow	3
Off Adm 32	Business Communications	3
Off Adm 82	Microcomputer Software Survey in the Office	3

2. Area Elective Subjects (14 units minimum)

		UNITS
Acctg 2	Introductory Accounting II	5
Bus 6	Business Law II	3
Finance 1	Principles of Finance	3
Finance 2	Investments	3
Market 21	Principles of Marketing	3
Mgmt 2	Organization and Management Theory	3
Mgmt 6	Public Relations	3
Supv 1	Elements of Supervision	3

3. Additional General Education Requirements (12 units)

	UNITS
Health and Physical Education	3
Humanities	3
Natural Sciences	3
Social and Behavioral Sciences	3

Students must pass a competency test in their understanding of American Institutions and U.S. History or complete an appropriate course in American Institutions or U.S. History. See Plan B.

[1]Off Adm 32 meets Language and Rationality (D1) General Education requirement.

[2]Acctg 1 meets Language and Rationality (D2) General Education requirement.

SALESPERSON'S LICENSE

Educational Requirements:

Real Estate Principles (Real Es 1)
Within 18 months after issuance of license, 2 additional 3-unit courses from the following:

Real Es 3	Real Estate Practices	3
Real Es 5	Legal Aspects of Real Estate I	3
Real Es 7	Real Estate Finance I	3
Real Es 9	Real Estate Appraisal I	3
Real Es 14	Property Management	3
Real Es 21	Real Estate Economics	3
Acctg 1	Introductory Accounting I	5
Bus 5	Business Law I	3

BROKER'S LICENSE

Educational Requirements:

Real Es 3	Real Estate Practices	3
Real Es 5	Legal Aspects of Real Estate I	3
Real Es 7	Real Estate Finance I	3
Real Es 9	Real Estate Appraisal I	3
Real Es 21	Real Estate Economics	3
	or	
Acctg 1	Introductory Accounting I	5

AND 3 courses from the following group:

Bus 5	Business Law I	3
Real Es 1	Real Estate Principles	3
Real Es 6	Legal Aspects of Real Estate II	3
Real Es 8	Real Estate Finance II	3
Real Es 10	Real Estate Appraisal II	3

Certificate Program

This program was developed with the cooperation of the Pierce College Real Estate Advisory Committee. A Certificate of Completion will be awarded upon the satisfactory completion of 24 units in the subject indicated below. This program gives a one-year, in-depth exposure into the field of Real Estate. These courses may also be applied towards the Associate in Arts Degree in Real Estate.

1. Required Area Subjects

		UNITS
Real Es 1	Real Estate Principles	3
Real Es 3	Real Estate Practices	3
Real Es 5	Legal Aspects of Real Estate I	3
Real Es 7	Real Estate Finance I	3
Real Es 9	Real Estate Appraisal I	3

2. Elective Area Subjects (9 units minimum)

		UNITS
Acctg 1	Introductory Accounting I	5
	or	
Acctg 21	Bookkeeping and Accounting I	3
Bus 5	Business Law I	3
Bus 6	Business Law II	3
Escrow 1	Fundamentals of Escrow	3
Finance 1	Principles of Finance	3
Finance 2	Investments	3
Market 1	Principles of Selling	3
Real Es 6	Legal Aspects of Real Estate II	3
Real Es 10	Real Estate Appraisal II	3

COMPUTER SCIENCE ASSOCIATE DEGREE PROGRAMS

The computer science department offers courses and curricula in several areas of emphasis in the computer field. The student may elect to complete the course work required to transfer to a four-year institution or may complete an occupationally oriented two-year curriculum. Students interested in completing the first two years of a bachelor's degree program should consult a member of the computer science staff or request copies of the transfer curricula from the department chairperson's office.

The department offers two areas of specialization at the associate degree level. They are Programming for Business and Programming for Computer Science. Associate degree curricula require the completion of a specific pattern of course work. Any substitutions or variations must have prior approval of the department.

These occupational programs MAY NOT constitute the first two years of a Bachelor's degree transfer program in these fields. Consult a counselor for transfer requirements.

PROGRAMMING FOR BUSINESS

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Curriculum prepares student in 2 years to enter job market as a business programmer.

NOTE: Math 115 or 1 year of high school algebra with a grade of "C" or better is a required prerequisite to becoming a computer science major. Verification required upon request.

Core Courses

FIRST SEMESTER		UNITS
[2]Co Sci 501	Introduction to Computers and Their Uses	3
[3]Co Sci 506	Beginning PASCAL Programming	3
Co Sci 507	Programming Logic	3
	Language and Rationality, General Education (English Composition)	3
	[1]General Education	3
SECOND SEMESTER		
Acctg 1	Introductory Accounting I	5
Business 38	Business Computations	3
Co Sci 508	Beginning BASIC Programming	3
Co Sci 530	Microcomputer Application Software	3
	[1]General Education	3
THIRD SEMESTER		
Co Sci 515	Beginning COBOL Programming	3
Co Sci 533	Microcomputer Database Programming	3
Co Sci 572	Computer Systems and Networks I	3
	[1]General Education	3
	Technical Elective	3
FOURTH SEMESTER		
Co Sci 535	Job Control Language and File Systems	3
Co Sci 545	Advanced COBOL Programming	3
Co Sci 560	Business Systems Design	3
	Technical Elective	3
	[1]General Education	3

[1]See catalog Graduation Plan B. See Pierce counselor for advisement.

[2]Credit for Co Sci 501 or 3, but not for both. Majors may waive this class by exam. (See schedule of classes for time or faculty advisor.)

[3]Recommendation: Proficiency in typing or keyboarding.

Technical Electives: Co Sci 512, 516, 536, 539, 581, Acctg 2, Off Adm 32, Bus 1.

Certificate Programs

All of these courses may be used to apply toward fulfillment of the requirements for an Associate degree in Programming for Business.

Prerequisites: Math 115 or one year of high school algebra with a grade of "C" or better.

A minimum of 12 units must be taken in the Computer Science Department at Pierce College within the last 5 years.

Certificate in Microcomputers and Small Business Systems

		UNITS
[2]Acctg 1	Introductory Accounting I	5
Bus 38	Business Computations	3
Co Sci 501	Introduction to Computers and Their Uses	3
[1]Co Sci 506	Beginning Pascal Programming	3
	or	
[1]Co Sci 508	Beginning BASIC Programming	
[1]Co Sci 507	Programming Logic	3
Co Sci 530	Microcomputer Application Software	3
[1]Co Sci 533	Microcomputer Database Programming	3
[1]Co Sci 560	Business Systems Design	3
Co Sci 572	Computer Systems and Networks I	3
[1]Off Adm 32	Business Communication	3

Certificate in Programming for Business

		UNITS
[2]Accig 1	Introductory Accounting I	5
Co Sci 501	Introduction to Computers and Their Uses	3
[1]Co Sci 506	Beginning Pascal Programming	3
	or	
[1]Co Sci 508	Beginning BASIC Programming	
[1]Co Sci 507	Programming Logic	3
[1]Co Sci 515	Beginning COBOL Programming	3
Co Sci 530	Microcomputer Application Software	3
[1]Co Sci 533	Microcomputer Database Programing	3
[1]Co Sci 535	Job Control Language and File Systms	3
[1]Co Sci 545	Advanced COBOL Programming	3
[1]Co Sci 560	Business Systems Design	3

[1]See catalog description for prerequisites.
[2]Accig 21 and 22 may be substituted.

PROGRAMMING FOR COMPUTER SCIENCE

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Curriculum prepares student for programming in a technical environment or transferring to a 4-year institution. See a Pierce counselor in the first semester for transfer education advisement.

The student must also contact the transfer institution to determine entrance level.

NOTE: Math 115 or one year of high school algebra with a grade of "C" or better is a prerequisite for this program. Verification is required upon request. However, Math 261 (Calculus I) is a graduation requirement.

FIRST SEMESTER		UNITS
[2]Co Sci 501	Introduction to Computers and Their Uses	3
[2]Co Sci 506	Beginning PASCAL Programming	3
[2]Co Sci 507	Programming Logic	3
	[1]General Education	3
	Language and Rationality, General Education (English Composition)	3
SECOND SEMESTER		
Co Sci 516	Beginning Mainframe Assembly Language and Architecture	3
Co Sci 536	Introduction to Data Structures	3
Math 261	Calculus I	5
	Technical Elective	3
	[1]General Education	3
THIRD SEMESTER		
Co Sci 513	Beginning FORTRAN Programming	
	or	3
Co Sci 515	Beginning COBOL Programming	
Co Sci 546	Advanced Mainframe Assembly Language and Architecture	3
Math 262	Calculus II	5
	Technical Elective	3
	[1]General Education	3
FOURTH SEMESTER		
Co Sci 532	Introduction to Data Bases	3
Co Sci 539	Programming in C	3
	Technical Electives	6
	[1]General Education	3

[1]See catalog Graduation Plan B. See Pierce counselor for advisements.
[2]Satisfies General Education Requirement, D2.
[3]Major may waive this class by exam (see Schedule of Classes for the time).

Recommendations: Proficiency in typing or keyboarding. Technical Electives: Co Sci 513, 515, 535, 543, 545, 578, Math 263, 270, and Philos 9.

Certificate Program

All of these courses may be used to apply toward fulfillment of the requirements for an Associate degree in Programming for Computer Science.

Prerequisites: Math 115 or one year of high school algebra with a grade of "C" or better. Verification required upon request.

Completion of the program listed below with a minimum of 15 computer science units taken at Pierce College within the last 5 years.

Certificate in Programming for Computer Science

		UNITS
Co Sci 501	Introduction to Computers and Their Uses	3
[1]Co Sci 506	Beginning PASCAL Programming	3
[1]Co Sci 507	Programming Logic	3
[1]Co Sci 516	Beginning Mainframe Assembly Language and Architecture	3
[1]Co Sci 536	Introduction to Data Structures	3
[1]Co Sci 546	Advanced Mainframe Assembly Language and Architecture	3
	Co Sci electives – see list below	9

Select 12 units from the following: Co Sci 513, 515, 532, 535, 539, 543, 545, and 578.

[1]See catalog course description for prerequisites.

COMPUTER TECHNOLOGY

The intent of this program is to produce graduates with the balanced knowledge of hardware and software required to install, operate, maintain and trouble-shoot microcomputers, minicomputers and computer networks in a variety of work environments.

The nine-month certificate graduates will be prepared for entry level jobs in microcomputer dealerships and repair shops, as well as internal maintenance groups within large corporations, or as the hardware specialist within a programming team. The program may be taken at night, so students can work while going to school.

Graduates will be prepared to install, operate, maintain and trouble-shoot systems and networks for the service divisions of large computer manufactures and computer applications organizations. This program can also be completed by going to school at night.

NOTE: One year of high school algebra or Math 115 with a grade of "C" or better is a prerequisite for this program. Verification is required upon request.

FIRST SEMESTER		UNITS
Co Sci 530	Microcomputer Application Software	3
[1,3]Co Sci 570	Computer Fundamentals	3
Co Sci 572	Computer Systems and Networks I	3
[1,2]Co Sci 575	Programming Concepts for Computer Technicians	4
SECOND SEMESTER		
[1]Co Sci 577	Discrete and Micro Integrated Circuits	2
[1]Co Sci 578	Microcomputer Architecture	3
[1]Co Sci 581	Computer Systems and Networks Repair	4
[1]CoSci 587	Introduction to Local Area Networks	4

SECOND YEAR

The second year of this program is currently under revision to provide a concentration of studies in computer systems network technology. Contact the Computer Science Department for more information on this program.

[1]*See Catalog for prerequisites. Program does not necessarily constitute first two years of a bachelor's program.*

[2]*Satisfies General Education Requirement, Plan B-D2.*

[3]*Satisfies General Education Requirement, Plan B-A.*

Microcomputer Service Technology Certificate Program

This program was developed in cooperation with the Computer Technology advisory committee for students who wish to take a technical program to prepare themselves for employment in the computer technology field. Can be completed in one academic year.

Prerequisite: Math 115 or one year of high school algebra with a grade of "C" or better. Verification required upon request.

Total units required: 27 units.

		UNITS
Co Sci 530	Microcomputer Application Software	3
[1]Co Sci 570	Computer Fundamentals	3
[1]Co Sci 572	Computer Systems and Networks I	3
[1]Co Sci 575	Programming Concepts for Computer Technicians	4
[1]Co Sci 577	Discrete and Micro Integrated Circuits	2
[1]Co Sci 578	Microcomputers Architecture	3
[1]Co Sci 581	Computer Systems and Network Repair	4
[1]CoSci 587	Introduction to Local Area Networks	4

[1]*See catalog description for prerequisites.*

ELECTRONICS

Certificate Programs

In collaboration with industry, the college staff has developed the program as shown below which leads toward a Certificate in Electronics with a specialization option in Digital, Communications, or Analog electronics. The certificate program has been designed to provide students with marketable skills at the completion of 32 units. If they wish, students may continue their education and obtain an Associate in Science Degree. To complete the Certificate Program, the core courses and one specialization option must be completed.

Certificate Program Core Requirements:

		UNITS
Electro 4A	Fundamentals of Electronics IA	3
Electro 4B	Fundamentals of Electronics IB	1
Electro 6A	Fundamentals of Electronics IIA	3
Electro 6B	Fundamentals of Electronics IIB	1
Electro 8A	Electron Devices A	3
Electro 8B	Electron Devices B	1
[1]Electro 10	Mathematics of Electronics I	3
[1]Electro 12	Mathematics of Electronics II	3
Electro 28	Electronic and Electro-Mechanical Drafting I	2

Certificate Specialization Options:

DIGITAL OPTION:

Electro 72	Digital Circuits I	4
Electro 74	Digital Circuits II	4
	[1]Technical Electives	4

COMMUNICATIONS OPTION:

Electro 44	Communications Electronics	3
Electro 45	Communications Electronics Laboratory	1
Electro 60	Microwave Fundamentals	3
Electro 61	Microwave Fundamentals Laboratory	1
	[1]Technical Electives	4

ANALOG OPTION:

Electro 26	Linear Circuits	3
Electro 27	Linear Circuits Laboratory	2
	or	
Electro 63	Circuit Analysis Laboratory	1
Electro 48	Integrated Circuits	4
	[1]Technical Electives	4

[1]*Electives may be chosen from any electronics course except Electro 2.*

[2]*Math 115 may be substituted for Electro 10 and 12.*

ELECTRONICS TECHNOLOGY OPTION

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Representatives from the electronics industry and Pierce College faculty have collaborated to design this course of study. Completion of this program prepares the student for employment as an electronics technician.

Technical Requirements

FIRST SEMESTER		UNITS
[5]Electro 4A	Fundamentals of Electronics IA	3
Electro 4B	Fundamentals of Electronics IB	1
[2]Electro 10	Mathematics of Electronics I	3
Electro 28	Electronic and Electro-Mechanical Drafting I	2
Electro 81	Projects Laboratory	1
[3]English 28	Intermediate Reading and Composition	
	or	
English 101	College Reading and Composition I	3
[4]Health 10	Health Education	2
[4]Phys Ed	Physical Education	1
SECOND SEMESTER		
Electro 6A	Fundamentals of Electronics IIA	3
Electro 6B	Fundamentals of Electronics IIB	1
Electro 8A	Electron Devices A	3
Electro 8B	Electron Devices B	1
[2]Electro 12	Mathematics of Electronics II	3
Electro 81	Projects Laboratory	1
	[1]General Education	6
THIRD SEMESTER		
Electro 26	Linear Circuits	3
Electro 27	Linear Circuits Laboratory	2
	or	
Electro 63	Circuit Analysis Laboratory	1
Electro 44	Communications Electronics	3
Electro 45	Communications Electronics Laboratory	1
Electro 72	Digital Circuits I	4
Electro 81	Projects Laboratory	1
FOURTH SEMESTER		
Electro 48	Integrated Circuits	4
Electro 74	Digital Circuits II	4
	[4]Technical Elective	3
	[1]General Education	3

Any Electronics courses not listed as specific courses for this program may receive elective credit toward program requirements. However, elective credit for Electro 2 is only given if no other Electronics course is taken before Electro 2. A maximum of 4 units of cooperative education may be used as elective credit.

For additional electives, see Electronics Department Chairperson. See catalog descriptions for prerequisites and corequisites.

[1]*See General Education Requirements, Plan B.*

[2]*Math 115 may be substituted for Electro 10 and 12.*

[3]*Meets General Education Requirements, Plan B, Part D1.*

[4]*Meets General Education Requirements, Plan B, Part E.*

[5]*Meets General Education Requirements, Plan B, Part A.*

ENGINEERING TECHNOLOGY OPTION

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Completion of this program will provide the student with the broad fundamental electronics background required for employment in all sectors of industry as an electronics engineering technician. It can also lead to a Bachelor of Science degree in Engineering Technology (Electronics) or Industrial Technology at some branches of the California State University system.

		UNITS
FIRST SEMESTER		
[5]Electrn 4A	Fundamentals of Electronics IA	3
Electrn 4B	Fundamentals of Electronics IB	1
[7]Electrn 10	Mathematics of Electronics I	3
Electrn 28	Electronic and Electro-Mechanical Drafting I	2
Electrn 81	Projects Laboratory	1
[3]English 28	Intermediate Reading and Composition	
	or	
English 101	College Reading and Composition I	3
[4]Health 10	Health Education	2
[4]Phys Ed	Physical Education	1
SECOND SEMESTER		
Electrn 6A	Fundamentals of Electronics IIA	3
Electrn 6B	Fundamentals of Electronics IIB	1
Electrn 8A	Electron Devices A	3
Electrn 8B	Electron Devices B	1
[7]Electrn 12	Mathematics of Electronics II	3
Electrn 81	Projects Laboratory	1
Physics 6	General Physics I	
	or	
Physics 11	Introductory Physics	4
	[1]General Education	3
THIRD SEMESTER		
Electrn 26	Linear Circuits	3
Electrn 27	Linear Circuits Laboratory	2
	or	
Electrn 63	Circuit Analysis Laboratory	1
Electrn 44	Communications Electronics	3
Electrn 45	Communications Electronics Laboratory	1
Electrn 72	Digital Circuits I	4
Electrn 81	Projects Laboratory	1
FOURTH SEMESTER		
Electrn 48	Integrated Circuits	4
Electrn 60	Microwave Fundamentals	3
Electrn 61	Microwave Fundamentals Laboratory	1
Electrn 74	Digital Circuits II	4
	[1]General Education	3

[1]*See General Education Requirements, Plan B.*

[2]*Meets General Education Requirements, Plan B, Part D2.*

[3]*Meets General Education Requirements, Plan B, Part D1.*

[4]*Meets General Education Requirements, Plan B, Part E.*

[5]*Meets General Education Requirements, Plan B, Part A.*

[6]*Transfer students should take Physics 11.*

[7]*Electrn 10 and 12 requirement may be met by taking Math 115.*

ENGINEERING

See Pre-Engineering in this section of the catalog.

INDUSTRIAL TECHNOLOGY — AUTOMOTIVE SERVICE TECHNOLOGY

Associate in Science Degree

Department Subject Advisor: Mr. Bart Trinchero

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

		UNITS
FIRST SEMESTER		
AST 1	Automotive Engines	5
AST 2	Suspension, Brakes, and Power Systems	5
[2]Ind Tek 100	Introduction to Industrial Education	1
[3]Math 145	Technical Mathematics I	3
Health 10	Health Education	2
SECOND SEMESTER		
AST 3	Engine Diagnosis and Tune-Up	5
AST 4	Starting and Charging Systems/ Automotive Electrical Circuits	5
AST 32	Automotive Service Technology Projects Laboratory-Chassis and Suspension Systems	1
[4]Phys Ed	Physical Education Activity	1
[1]Phys Sc 1	Physical Science I	3
THIRD SEMESTER		
AST 5	Standard Transmissions, Clutches, Drive Lines, and Differentials	3
AST 6	Automatic Transmissions	5
AST 7	Air Conditioning	3
AST 34	Automotive Service Technology Projects Laboratory - Electrical Circuits	2
English 28	Intermediate Reading and Composition	3
FOURTH SEMESTER		
AST 20	Automotive Electronic Computer Control Systems	3
AST 21	Computer - Controlled Electronic Fuel Injection Systems	3
AST 23	The Clean Air Car	3
AST 36	Automotive Service Technology Projects Laboratory - Standard Transmissions Clutches, Drivelines, and Differentials/Air Conditioning	1
	General Education	6

[1]*Meets Natural Science Requirement for graduation general requirement.*

[2]*Must be completed during first or second semester of study.*

[3]*Math 116, 115 or 125 may be substituted. Any of these courses fulfills the Communication and Analytical Thinking Graduation General Education Requirement.*

Certificate Program

For students who wish to complete a minimum of classes in one year to prepare for employment. A minimum of 45 units are required.

		UNITS
AST 1	Automotive Engines	5
AST 2	Suspension, Brakes and Power Systems	5
AST 3	Engine Diagnosis and Tune-Up	5
AST 4	Starting and Charging Systems/ Automotive Electrical Circuits	5
AST 5	Standard Transmissions, Clutches, Drive Lines, and Differentials	3
AST 6	Automatic Transmissions	5
AST 7	Air Conditioning	3
AST 20	Automotive Electronic Computer Control Systems	3
AST 21	Computer-Controlled Electronic Fuel Injection Systems	3
AST 23	The Clean Air Car	3
AST 32	Automotive Service Technology Projects Laboratory - Chassis and Suspension Systems	1
AST 34	Automotive Service Technology Projects Laboratory - Electrical Circuits	2
AST 36	Automotive Service Technology Projects Laboratory - Standard Transmissions, Clutches, Drivelines and Differentials/ Air Conditioning	1
Ind Tek 100	Introduction to Industrial Education	1
	Elective	3

INDUSTRIAL TECHNOLOGY — DRAFTING — MECHANICAL

Associate in Arts Degree

Department Subject Advisors: L.W. Humphrey and C.H. Mull

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This associate degree prepares the student for entry level employment as a draftsperson in engineering and manufacturing industries, as well as for positions existing with federal, state, and local government agencies. With the addition of practical industrial experience, draftpersons may eventually become designers in their chosen area of concentration. Includes introduction to and training in computer aided drafting. A total of 62 units is required.

FIRST SEMESTER		UNITS
[1]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 112	Applied Technical Drafting I	4
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 130	Technology of Metal Machining Processes I	3
[3]Math 145	Technical Mathematics I	3
SECOND SEMESTER		
Ind Tek 140	Fundamentals of CNC Technology	3
[2]Ind Tek 212	Applied Technical Drafting II	4
[2]Ind Tek 218	Technical Descriptive Geometry	3
[3]Math 146	Technical Mathematics II	3
	General Education	3
THIRD SEMESTER		
Electro 28	Electronic and Electro-Mechanical Drafting I	2
Ind Tek 102	Introduction to Precision Inspection and Quality Control	2
Ind Tek 217	Applied Computer Drafting I	4
Ind Tek 312	Applied Technical Drafting III	4
	General Education	4
FOURTH SEMESTER		
Ind Tek 223	General Metallurgy I	3
Ind Tek 317	Applied Computer Drafting II	4
	General Education	8

[1]*Ind Tek 100 must be completed during the first 2 semesters.*

[2]*Ind Tek 212 and 218 should be taken concurrently.*

[3]*Math 115 may be substituted for Math 145, and Math 240 for Math 146.*

Carefully study Graduation Plan B under Graduation Requirements in the course catalog when considering alternative Gen Ed courses.

Additional recommended courses include Art 132, Art 133, Ind Tek 150, 230, 321, and 325.

Certificate Program

This certificate program is designed for students wishing to complete only the technical requirements in drafting. No General Education courses are included in this three semester program. A total of 32 units is required.

FIRST SEMESTER		UNITS
Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 112	Applied Technical Drafting I	4
Math 145	Technical Mathematics I	3
SECOND SEMESTER		
Ind Tek 212	Applied Technical Drafting II	4
Ind Tek 217	Applied Computer Drafting I	4
Ind Tek 218	Technical Descriptive Geometry	3
Math 146	Technical Mathematics II	3
THIRD SEMESTER		
Electro 28	Electronic and Electro-Mechanical Drafting I	2
Ind Tek 312	Applied Technical Drafting III	4
Ind Tek 317	Applied Computer Drafting II	4

INDUSTRIAL TECHNOLOGY — ENGINEERING TECHNICIAN

Associate in Science Degree

Advisor: Mr. Robert Munsey (Sign Language Spoken)

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Technicians work as members of engineering or scientific teams in research and production planning, in design and construction, in managing, maintaining, and selling the materials and machines of our mass-production economy. Scientific or engineering technicians combine some of the knowledge and training of the professional with the skills of the artisan.

Variations in this program may lead to a B.S. degree in Engineering Technology or Industrial Technology at some campuses of the California State University and Colleges. See transfer programs in the appropriate section or consult a counselor. The General Education courses are in accordance with Graduation Plan A.

Students planning to pursue this program must see the Industrial Technology Department chairperson. The curriculum shown is basic but will require adjusting to the background and goals of each student. A program of study must be developed to lead to the AS degree.

FIRST SEMESTER		UNITS
Eng Gen 101	Introduction to Science, Engineering and Technology	2
[2]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 104	Blueprint Reading I	2
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 130	Technology of Metal Machining Processes I	3
[1]Phys Ed	Physical Education Activity	1
	[1]General Education	3
SECOND SEMESTER		
[1]English 28	Intermediate Reading and Composition	3
[1]Health 10	Health Education	2
Ind Tek 112	Applied Technical Drafting I	4
	[3]Math	3
[1]Physics 11	Introductory Physics	4
THIRD SEMESTER		
	[3]Math or Technical Subject	3
[1]Chem 40	Basic Chemistry	3
Ind Tek 212	Applied Technical Drafting II	4
Ind Tek 218	Technical Descriptive Geometry	3
	[1]General Education	3
FOURTH SEMESTER		
Ind Tek 223	General Metallurgy I	3
Ind Tek 327	Introduction to Composite Materials	3
	[3]Math or Technical Subject	3
	Technical Subject	3
	[1]General Education	3

[1]*Meets General Education Requirements, Plan A.*

[2]*Must be completed during first or second semester of study.*

[3]*See Advisor for proper selection.*

INDUSTRIAL TECHNOLOGY — GENERAL — OPTION I

Associate in Science Degree

Department Subject Advisor: Mr. Robert Munsey
(Sign Language Spoken)

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed for those students who desire a broad background combining industrial areas and the liberal arts. It is also generally acceptable toward the Industrial Arts or Technology degree at some campuses of the California State University and Colleges. This curriculum can serve as the first two years for the Production Technology Option at CSULA. See the catalog section for Graduation General Education Subject Requirements, Plan A.

Attention: Students planning to follow this program must contact the department chairperson or the department advisor.

		UNITS
FIRST SEMESTER		
[1]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 112	Applied Technical Drafting I	4
Ind Tek 120	Basic Woodworking	4
	General Education	6
SECOND SEMESTER		
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 130	Technology of Metal Machining Processes I	3
	General Education	9
THIRD SEMESTER		
AST 5	Standard Transmissions, Clutches, Drive Lines, and Differentials	3
Ind Tek 327	Introduction to Composite Materials	3
	General Education	9
FOURTH SEMESTER		
Ind Tek 242	Introduction to CAD/CAM–Numerical Control	3
	General Education	12

[1]*Must be completed during first or second semester of study.*

Technical Electives: Ind Tek 140, 151, 161, 223, 321, 323, and 325. See also Computer Science, Electronics and Quality Control Non-Destructive Testing courses.

INDUSTRIAL TECHNOLOGY — GENERAL — OPTION II

Associate in Science Degree

Department Subject Advisor: Mr. Robert Munsey
(Sign Language Spoken)

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This major established in accordance with the recommendations of the Industry Advisory Committee. The General Education is in accordance with Graduation Plan B.

For information and assistance, see the Department Chairperson.

		UNITS
FIRST SEMESTER		
[1]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 112	Applied Technical Drafting I	4
Ind Tek 120	Basic Woodworking	4
[2]Math 145	Technical Mathematics I	3
	General Education	3
SECOND SEMESTER		
AST 5	Standard Transmissions, Clutches, Drive Lines, and Differentials	3
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 161	General Welding I	3
Health 10	Health Education	2
[3]Math 146	Technical Mathematics II	3
THIRD SEMESTER		
English 28	Intermediate Reading and Composition	3
Ind Tek 130	Technology of Metal Machining Processes I	3
Ind Tek 212	Applied Technical Drafting II	4
Ind Tek 220	Machine Woodworking	4
[1]Phys Sc 1	Physical Science I	3
FOURTH SEMESTER		
Ind Tek 230	Technology of Metal Machining Processes II	3
Ind Tek 242	Introduction to CAD/CAM – Numerical Control	3
Ind Tek 325	Lost Wax Casting I	3
	General Education	6

Technical Electives: Ind Tek 161, 223, 230, 242, 321, 323, 325, and 327.

[1]*Must be completed by first or second semester of study.*

[2]*Math 115 or 116 or 120 may be substituted.*

[3]*Math 146 meets graduation requirements. Math 240 may be substituted.*

Certificate Program

For students who wish to complete a minimum of classes to prepare for employment. A minimum of 35 units is required. Cannot be completed in one academic year.

		UNITS
AST 5	Standard Transmissions, Clutches, Drive Lines, and Differentials	3
Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 112	Applied Technical Drafting I	4
Ind Tek 120	Basic Woodworking	4
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 130	Technology of Metal Machining Processes I	3
Ind Tek 151	Introduction to Quality And Non-Destructive Evaluation	3
Ind Tek 161	General Welding I	3
Ind Tek 212	Applied Technical Drafting II	4
Ind Tek 220	Machine Woodworking	4
Ind Tek 230	Technology of Metal Machining Processes II	3
Ind Tek 242	Introduction to CAD/CAM – Numerical Control	3

INDUSTRIAL TECHNOLOGY — MACHINE SHOP TECHNOLOGY

Associate in Arts Degree

Department Subject Advisor: Mr. Gordon Eisenbart

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degree. See Graduation Requirements.

This program will provide the student with practical knowledge and skills related to machine shop tools, materials, and processes. A graduate may find employment opportunities as a machinist, tool maker, machine-tool setup, machine-tool operator, or in allied fields such as numerical control machine operator, moldmaker, pattern-maker, parts inspector, and process engineering. With careful departmental advising the student can transfer many of the following courses to several of the California State Colleges and Universities to meet lower division requirements for a Bachelor's Degree in Manufacturing Engineering and Industrial Engineering. The following is only a suggested sequence of courses. Courses may be taken in any order as long as the prerequisites are met. General Education requirements follow Graduation Plan B as authorized by the LACCD Trustees and outlined in this catalog. All Machine Shop Technology majors must meet each semester with a Machine Shop Technology faculty advisor, Mr. Gordon Eisenbart, each semester. See additional notes relating to specific courses following the curriculum plan.

FIRST SEMESTER		UNITS
[9]Ind Tek 100	Introduction to Industrial Education	1
[8]Ind Tek 104	Blueprint Reading I	2
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 130	Technology of Metal Machining Processes I	3
[6]Math 145	Technical Mathematics I	3
[4]Gen Ed	Health and Physical Education Activity	1
(The above selection of classes provides a possible entry level employment package.)		
SECOND SEMESTER		
Ind Tek 102	Introduction to Precision Inspection and Quality Control	2
Ind Tek 140	Fundamentals of CNC Technology	3
Ind Tek 230	Technology of Metal Machining Processes II	3
[6]Math 146	Technical Mathematics II	3
[4]Gen Ed	Natural Science	3
	[5]Electives	2
THIRD SEMESTER		
Ind Tek 244	CNC Programming and Machine Operation – Lathe	3
[7]Ind Tek 330	Technology of Metal Machining Processes III	3
[7]Ind Tek 332	Projects Laboratory in Metal Machining Processes I	3
Gen Ed	Social and Behavioral Science	3
	[5]Electives	4
FOURTH SEMESTER		
Ind Tek 248	CNC Programming and Machine Operation – Mill	3
[7]Ind Tek 331	Tool Design for Production	3
Gen Ed	Humanities	3
[4]Gen Ed	Language and Rationality	6

CREDIT BY EXAMINATION

Students may enter the program at a level appropriate to their previous industrial experience and training. See Credit by Exam policies in this catalog. See the Faculty Advisor for Machine Shop Technology before enrolling. The Machine Shop Faculty Advisor is Mr. Gordon Eisenbart.

Certificate Program

The certificate program in Machine Shop Technology is designed for students wishing to complete only the technical requirements from the Machine Shop Technology Associate Degree while employed and attending Pierce College part time. It is also designed to enable other majors in the Industrial Technology Department secure certification in Machine Shop Technology as a second area of expertise. The notes applying to the Associate degree apply to the certificate program. Courses may be taken in any sequence as long as the prerequisites are met; however, the first 5 courses listed provide a possible entry level employment package. Students working on this certificate program must meet each semester with the Machine Shop Faculty Advisor, Mr. Gordon Eisenbart. A minimum of 34 units must be completed for the certificate.

		UNITS
[9]Ind Tek 100	Introduction to Industrial Education	1
[8]Ind Tek 104	Blueprint Reading I	2
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 130	Technology of Metal Machining Processes I	3
[6]Math 145	Technical Mathematics I	3
(The above provides a possible entry level employment package.)		
Ind Tek 140	Fundamentals of CNC Technology	3
Ind Tek 244	CNC Programming and Machine Operation – Lathe	3
[6]Math 146	Technical Mathematics II	3
For the following classes see Note 7 of Machine Shop Technology AA Degree.		
Ind Tek 230	Technology of Metal Machining Processes II	3
Ind Tek 330	Technology of Metal Machining Processes III	3
Ind Tek 331	Tool Design for Production	3
Ind Tek 332	Projects Laboratory in Metal Machining Processes I	3

[1]The Machine Shop Technology Associate Degree is designed to follow the LACCD Graduation Plan B as outlined in this catalog, for the general education requirements. Students contemplating in transferring to a 4-year institution must consult with the Machine Shop Faculty Advisor (Mr. Gordon Eisenbart) and a counselor regarding the graduation requirements under the Certified Plan and Plan A.

[2]Students may enter the program at a level appropriate to their previous training and experience. Contact the Machine Shop Technology Faculty Advisor(Mr. Gordon Eisenbart). See Credit-by-Exam Policies in this catalog.

[3]Electro 2 or 4 is recommended. See note 1.

[4]English 101 and Off Adm 32 is recommended for D1. See Certified Plan for Transfer to a 4-year institution and see Note 1. Computer languages and Electronics also recommended for D2.

[5]Students may select elective units in Numerical Control or Machine Shop. Additional elective units suggested are: Ind Tek 223; Ind Tek 323, 325; Ind Tek 112, 314. Careful selection of electives could lead to a certificate with an emphasis in Numerical Control, Tooling Tech., or Drafting.

[6]Math 115 may be substituted for Math 145 or competency can be demonstrated with the math competency test. Math 120 and 240 may be substituted for Math 146. Math 146 meets graduation requirements.

[7]Ind Tek 230, Ind Tek 330, Ind Tek 331, and Ind Tek 332 may not be taken at the same hour in the same semester.

[8]Ind Tek Majors with an emphasis in Drafting completing a Certificate in Machine Shop Technology may substitute Ind Tek 112.

[9]Ind Tek 100 must be completed in the first two semesters.

INDUSTRIAL TECHNOLOGY — NUMERICAL CONTROL PROGRAMMING

Associate in Science Degree

Department Subject Advisor: Mr. Ron Smetzer

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Numerical Control is a system (sometimes referred to as CAM – Computer-Aided Manufacturing) using specially prepared instructions, developed by the N/C Programmer, to control the operation of various manufacturing equipment such as machine tools, inspection machines, woodworking machines, laser machines, and robots. The following associate degree is offered at the suggestion of the Industry Advisory Committee for Numerical Control. General Education requirements follow Graduation Plan B in this catalog. Courses may be taken in any sequence as long as the prerequisites are met. All students majoring in this area must meet each semester with the Numerical Control Faculty Advisor, Mr. Ron Smetzer.

FIRST SEMESTER		UNITS
Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 102	Introduction to Precision Inspection and Quality Control	2
[1]Ind Tek 104	Blue Print Reading I	2
[7]Ind Tek 130	Technology of Metal Machining Processes I	3
Ind Tek 140	Fundamentals of CNC Technology	3
[2]Math 146	Technical Mathematics II	3
(The above may provide entry level employment opportunities.)		
SECOND SEMESTER		
Ind Tek 121	Manufacturing Materials and Processes	4
[7]Ind Tek 230	Technology of Metal Machining Processes II	3
Ind Tek 244	CNC Programming and Machine Operation – Lathe	3
	General Education	3
	[3]Elective	3
THIRD SEMESTER		
Ind Tek 242	Introduction to CAD/CAM – Numerical Control	3
Ind Tek 248	CNC Programming and Machine Operation – Mill	3
[7]Ind Tek 330	Technology of Metal Machining Processes III	3
Ind Tek 342	Computer-Assisted Part Programming Languages – Introduction APT	3
[3]Gen Ed	Natural Science	3
FOURTH SEMESTER		
[7]Ind Tek 331	Tool Design for Production	3
	[8]Industrial Technology Course	3
[4,6]Gen Ed	Language and Rationality	3
	General Education	6

[1]*Drafting and Tooling Design Majors completing this Degree or Certificate may substitute Ind Tek 112.*

[2]*Math 120 and 240 are strongly recommended as a substitute for Math 146. Math 146 meets graduation requirements.*

[3]*Phys Sc 1, Electro 2, 4 are recommended.*

[4]*Off Adm 32 is recommended for D1 of Graduation Plan B. See Certified Plan for transfer to a 4-yr institution. Computer languages and Electronics also recommended.*

[5]*Suggested electives: Num Con 185, 285, 385 are strongly recommended; Co Sci 506, 508, 513; Coop Ed; Math 260, Phil 6, 9; Speech 103. Care in selection could lead to a second certificate. See Mr. Ron Smetzer, NC Faculty Advisor.*

[6]*A computer science language class is recommended. Language and Rationality units total 6. They can be taken in any combination. See note 4.*

[7]*Ind Tek 130, 230, 330, 331 and 332 cannot be taken at the same hour in the same semester.*

[8]*See Advisor for proper selection to complete major.*

Certificate Program

The Certificate Program is designed for students wishing to complete only the technical requirements of Numerical Control Programming Associate Degree program, secure employment, and possibly complete the Numerical Control Programming Associate Degree while employed and attending Pierce College part time. It is also designed to enable drafting, tool design, machine shop, and other majors secure certification in Numerical Programming as a second area of expertise. The notes applying to the Associate Degree apply to the certificate program. Courses may be taken in any sequence as long as the prerequisites are met. However; the first five courses listed provide a possible entry level employment package. Students working on this certificate program must meet each semester with Mr. Ron Smetzer, NC faculty Advisor. A minimum of 35 units is required.

		UNITS
Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 102	Introduction to Precision Inspection and Quality Control	2
[3]Ind Tek 104	Blue Print Reading I	2
[1]Ind Tek 130	Technology of Metal Machining Processes I	3
Ind Tek 140	Fundamentals of CNC Technology	3
(The above provides a possible entry level employment package.)		
[1]Ind Tek 230	Technology of Metal Machining Processes II	3
Ind Tek 244	CNC Programming and Machine Operation – Lathe	3
Ind Tek 248	CNC Programming and Machine Operation – Mill	3
[1]Ind Tek 330	Technology of Metal Machining Processes III	3
[1]Ind Tek 331	Tool Design for Production	3
Ind Tek 342	Computer-Assisted Part Programming Languages – Introduction APT	3
	[4]Industrial Technology Course	3
[2]Math 146	Technical Mathematics II	3

[1]*Ind Tek 130, 230, 330, 331, 332 cannot be taken at the same hour the same semester.*

[2]*Math 120 and 240 are strongly recommended as a substitute for Math 146.*

[3]*Drafting or Tooling Design Majors completing this certificate may substitute Ind Tek 112.*

[4]*See Advisor for proper selection to complete major.*

CREDIT BY EXAMINATION

Students may enter the program at a level appropriate to their previous industrial experience and training. See Credit by Exam Policies in this catalog. Students must meet each semester with Mr. Ron Smetzer, NC Faculty Advisor, before enrolling in a class to be eligible for the credit requested.

INDUSTRIAL TECHNOLOGY – QUALITY CONTROL – OPTION I

Associate in Science Degree

Department Subject Advisor: Mr. Robert Munsey
(Sign Language Spoken)

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is the direct result of industry's ever-growing demand for people with specific training in quality control nomenclature, practices, and planning. For General Education Subject Requirements, follow Plan B. If an eventual 4-year degree is considered, be aware of the requirements different from Plan B.

FIRST SEMESTER		UNITS
[1]English 28	Intermediate Reading and Composition	3
[1]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 104	Blueprint Reading I	2
Ind Tek 150	Fundamentals of Quality Control	3
[2]Math 145	Technical Mathematics I	3
[2]Phys Sc 1	Physical Science I	3
SECOND SEMESTER		
Electro 4	Fundamentals of Electronics I	4
Ind Tek 250	Quality Control Systems	3
Ind Tek 252	Introduction to Destructive Materials Testing	3
[1]Health 10	Health Education	2
[4]Math 146	Technical Mathematics II	3
[5]Phys Ed	Physical Education Activity	1
THIRD SEMESTER		
Ind Tek 350	Quality Control Statistical Procedures	3
Ind Tek 254	Quality Control Measurements	3
Ind Tek 354	Quality Control Inspection Planning	3
Ind Tek 452	Quality Control Cost Estimating	3
	[6]General Education	3
FOURTH SEMESTER		
Ind Tek 256	Introduction to Non-Destructive Material Testing	3
Ind Tek 352	Quality Control Engineering	3
Ind Tek 450	Quality Control Management	3
Ind Tek 454	Quality Control Procedures Writing	3
	[6]General Education	3

[1]*Suggested Electives: Ind Tek 121, 130, 140, 223, 242, 321, and 327. See Quality Control Non-Destructive Courses.*

[2]*General Education Requirements, Plan B, Part D1.*

[3]*Meets General Education Requirements, Plan B, Part A.*

[4]*Math 115, 116, or 125 may be substituted.*

[5]*Math 240 may be substituted. Math 146 meets graduation requirements.*

[6]*Meets General Education requirements, Plan B, Part E.*

[7]*See General Education requirements, Plan B, Parts B and C.*

[8]*Must be completed during first or second semester of study.*

Certificate Program

Students who wish to complete a minimum of classes to prepare for employment. A minimum of 30 units is required. Cannot be completed in one academic year.

		UNITS
Electro 4	Fundamentals of Electronics I	4
Ind Tek 104	Blueprint Reading I	2
Ind Tek 150	Fundamentals of Quality Control	3
Ind Tek 250	Quality Control Systems	3
Ind Tek 252	Introduction to Destructive Materials Testing	3
Ind Tek 254	Quality Control Measurements	3
Ind Tek 256	Introduction to Non-Destructive Materials Testing	3
Ind Tek 350	Quality Control Statistical Procedures	3
Ind Tek 352	Quality Control Engineering	3
Ind Tek 354	Quality Control Inspection Planning	3
Ind Tek 450	Quality Control Management	3

INDUSTRIAL TECHNOLOGY – QUALITY CONTROL – OPTION II – NON-DESTRUCTIVE EVALUATION

Associate In Science Degree

Department Subject Advisor: Mr. Robert Munsey
(Sign Language Spoken)

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This major has been established in accordance with the American Society for Non-Destructive Testing. It is in conformity with SNT-TC-1 and MIL-STD-410. The courses should be taken, as nearly as possible, in the order presented as there is a considered order of progression. The General Education courses are in accordance with Graduation Plan B. If an eventual scholastic goal includes a BA degree, see the Department Advisor during the first semester of study.

NOTE: This program is being revised. See QC - NDT Advisor, Professor Robert Munsey, for selection of courses to meet A.S. Degree requirements for the major.

FIRST SEMESTER		UNITS
[1]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 151	Introduction to Quality and Non-Destructive Evaluation	3
Ind Tek 157	Liquid Penetrant/MagneticParticle Testing	3
[2, 4]Math 145	Technical Mathematics I	3
	General Education	3
SECOND SEMESTER		
Ind Tek 104	Blueprint Reading I	2
Ind Tek 153	Non-Destructive Testing/Visual Examination	3
Ind Tek 242	Introduction to CAD/CAM – Numerical Control	3
[5]English 28	Intermediate Reading and Composition	3
[5]Math 146	Technical Mathematics II	3
THIRD SEMESTER		
Ind Tek 255	Non-Destructive Testing/Eddy Current Inspection	3
Ind Tek 353	Radiographic Inspection	3
[6]Phys Sc 1	Physical Science I	3
	Electives	3
	General Education	3
FOURTH SEMESTER		
Ind Tek 253	Non-Destructive Testing/Ultra Sonic Inspection	3
Ind Tek 327	Introduction to Composite Materials	3
Ind Tek 451	Non-Destructive Testing/Radiographic Interpretation	3
Ind Tek 457	Procedure Writing for Non-Destructive Evaluation	3
	General Education	3

Suggested Electives: Ind Tek 102, 150, 223, and 354; Coop. Ed., any college level subject may be selected.

[1]*Must be completed during first or second semester of study.*

[2]*Students may substitute Math 115, 116, 220 for Math 145.*

[3]*Students may substitute Math 240 for Math 146. Math 146 meets graduation requirements.*

[4]*Meets General Education requirements, Plan B, Part D2.*

[5]*Meets General Education requirements, Plan B, Part D1.*

[6]*Meets General Education requirements, Plan B, Part A.*

Certificate Program

Students who wish to complete a minimum of classes to prepare for employment. A minimum of 30 units is required. Cannot be completed in one academic year.

		UNITS
Ind Tek 104	Blueprint Reading I	2
Ind Tek 121	Manufacturing Materials and Processes	4
Ind Tek 151	Introductions to Quality and Non-Destructive Evaluation	3
Ind Tek 153	Non-Destructive Testing/Visual Examination	3
Ind Tek 157	Liquid Penetrant/Magnetic Particle Testing	3
Math 145	Technical Mathematics I	3
Math 146	Technical Mathematics II	3
Ind Tek 253	Non-Destructive Testing/Ultra Sonic Inspection	3
Ind Tek 255	Non-Destructive Testing/Eddy Current Inspection	3
Ind Tek 327	Introduction to Composite Materials	3

INDUSTRIAL TECHNOLOGY — WELDING — OPTION I

Associate in Arts Degree

Department Subject Advisor: Jim Johnson

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This Industrial Technology option is designed to provide intensive vocational training in all common types of welding. The student has the opportunity to prepare for certification in oxy-acetylene, shielded metal arc, and inert gas arc welding methods and can earn the Certificate of Completion and Associate Degree. This program was developed and is reviewed regularly by an Industry Advisory Committee and in conjunction with the American Welding Society. For General Education requirements, follow Plan B. Evening and part time students, note the course equivalencies for Industrial Technology 160, 260, 360, and 460.

Manipulative test for Los Angeles City Welding Certification is available for welding students and the general public. Contact Welding instructors for details.

FIRST SEMESTER		UNITS
[1]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 104	Blueprint Reading I	2
Ind Tek 160	Vocational Welding I	7
[3,4]Math 145	Technical Mathematics I	3
	General Education	3
SECOND SEMESTER		
[5]English 28	Intermediate Reading and Composition	3
Ind Tek 223	General Metallurgy I	3
Ind Tek 260	Vocational Welding II	7
[3]Math 146	Technical Mathematics II	3
THIRD SEMESTER		
Ind Tek 325	Lost Wax Casting I	3
Ind Tek 360	Vocational Welding III	7
	General Education	3
	Technical Elective (see Weld Advisor)	3
FOURTH SEMESTER		
Ind Tek 460	Vocational Welding IV	7
Phys Sc 1	Physical Science I	3
	General Education	6

Note: Students may enter the program at a level appropriate to previous training and experience. Suggested Electives: Ind Tek 102, 121, 130, 140, 251, 351.

[1]Must be completed during first or second semester of study.

[2]Math 115, 116, or 125 may be substituted.

[3]Math 240 may be substituted.

[4]Meets General Education requirements, Plan B, Part D2.

[5]Meets General Education requirements, Plan B, Part D1.

Certificate Program

Students who wish to complete a minimum of classes to prepare for employment. A minimum of 40 units is required. Cannot be completed in one academic year.

		UNITS
Ind Tek 160	Vocational Welding I	7
Ind Tek 223	General Metallurgy I	3
Ind Tek 260	Vocational Welding II	7
Ind Tek 325	Lost Wax Casting I	3
Ind Tek 360	Vocational Welding III	7
Ind Tek 460	Vocational Welding IV	7
Math 145	Technical Mathematics I	3
Math 146	Technical Mathematics II	3

INDUSTRIAL TECHNOLOGY — WELDING — OPTION II

Associate in Arts Degree

Department Subject Advisor: Jim Johnson

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This Industrial Technology option is designed for evening students. It will provide intensive vocational training in all common types of welding. The student has the opportunity to prepare for certification in oxy-acetylene, shielded metal arc, and inert gas arc welding methods and can earn the Certificate of Completion and Associate Degree. This program was developed and is reviewed regularly by an Industry Advisory Committee and in conjunction with the American Welding Society. For General Education requirements, follow Graduation Plan B. Evening and part time students, note the course equivalencies for Industrial Technology 160, 260, 360, and 460.

Manipulative test for Los Angeles City Welding Certification is available for welding students and the general public. Contact Welding instructors for details.

FIRST SEMESTER		UNITS
[1]Ind Tek 100	Introduction to Industrial Education	1
Ind Tek 104	Blueprint Reading I	2
[1]Ind Tek 161	General Welding I	3
Ind Tek 162	Beginning Welding II	3
[2,4]Math 145	Technical Mathematics I	3
	General Education	3
SECOND SEMESTER		
Ind Tek 261	General Arc Welding I	3
Ind Tek 262	General Arc Welding II	3
Ind Tek 223	General Metallurgy I	3
[3]Math 146	Technical Mathematics II	3
[5]English 28	Intermediate Reading and Composition	3
THIRD SEMESTER		
Ind Tek 325	Lost Wax Casting I	3
Ind Tek 361	Inert Gas Arc Welding I	3
Ind Tek 362	Inert Gas Arc Welding II	3
	Technical Elective (see Weld Advisor)	3
	General Education	3
FOURTH SEMESTER		
Ind Tek 461	Advanced Arc Welding I	3
Ind Tek 462	Advanced Welding II	3
Phys Sc 1	Physical Science I	3
	General Education	6

Note: Students may enter the program at a level appropriate to previous training and experience.

Suggested Electives: Ind Tek 102, 121, 130, 140, 251, 351.

[1]Must be completed during first or second semester of study.

[2]Math 115, 116, or 125 may be substituted.

[3]Math 240 may be substituted. Math 146 meets graduation requirements.

[4]Meets General Education Requirements, Plan B, Part D2.

[5]Meets General Education Requirements, Plan B, Part D1.

Certificate Program

For Evening students who wish to complete a minimum of classes to prepare for employment. A minimum of 39 units is required. Cannot be completed in one academic year

		UNITS
Ind Tek 161	General Welding I	3
Ind Tek 162	Beginning Welding II	3
Ind Tek 223	General Metallurgy I	3
Ind Tek 261	General Arc Welding I	3
Ind Tek 262	General Arc Welding II	3
Ind Tek 325	Lost Wax Casting I	3
Ind Tek 361	Inert Gas Arc Welding I	3
Ind Tek 362	Inert Gas Arc Welding II	3
Ind Tek 461	Advanced Arc Welding I	3
Ind Tek 462	Advanced Arc Welding II	3
Math 145	Technical Mathematics I	3
Math 146	Technical Mathematics II	3
	Coop Education or Independent Study	3

JOURNALISM

Also see PhotoJournalism

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program was prepared with the cooperation of the Pierce College Journalism Advisory Committee, made up of professionals from the print media and from broadcasting and from public relations. It is designed for students who plan to enter those professions after two years of college. In addition to the A.A. degree, a certificate of achievement as a journalism major is awarded to the student upon graduation.

1. Required Area Subjects

		UNITS
Journal 100	Social Values in Mass Communications	3
[1]Journal 101	Collecting and Writing News	3
Journal 202	Advanced Newswriting	3
Journal 216	Copyreading and Headline Writing	3
Journal 218	Practical Editing	3-3
[2]Photo 10	Beginning Photography	3
Photo 20	Beginning Photojournalism	4

2. Area Elective Subjects (6 units minimum)

Recommended Electives

		UNITS
Art 500	Introduction to Design	3
Coop Ed	Cooperative Education	3
English 101	College Reading and Composition I and/or	3
English 28	Intermediate Reading and Composition	3
English 102	College Reading and Composition II	3
Journal 108	Article Writing	3
Journal 217	Publication Laboratory	2
Journal 219	Techniques for Staff Editors	1
Journal 220	Magazine Editing	3
Photo 11	Advanced Photography	4
Photo 12	Advanced Photographic Techniques	4
Photo 16	Fundamental Commercial Photography	3
Photo 17	Introduction to Color Photography	3
Photo 21	News Photography	4
Photo 27	History and Aesthetics of Photography	6
Pub Rel 1	Principles of Public Relations	3
	Shorthand (any)	3
	Typewriting (any)	3

3. General Education - Select 12 Units.

See graduation requirement section.

[1]Journal 101 meets the graduation general education requirement of section D.1.

[2]Photo 10 meets the graduation general education requirement of Section C.

LATIN AMERICAN STUDIES

The considerable value of an understanding of Latin America is generally evident today. The Latin American Studies Program offers a broad and flexible interdisciplinary approach designed to provide a comprehensive understanding of Latin America. The curriculum leads to the Associate in Arts Degree with a major in Latin American studies that transfers to both private and public four-year colleges and universities.

This major can lead to careers in government, foreign service, law, international business, journalism and many other fields after attaining the Bachelor of Arts and/or Master of Arts degrees.

The following areas of knowledge are central to the Associate's degree in Latin American studies:

- knowledge and understanding of the major historical, cultural, social, political, and economic problems facing the Latin American community;
- knowledge of chief historical factors that give rise to existing institutions and processes; and
- an informed awareness of literature, art, and music in Latin America, including familiarity with the work of several recognized Latin American artists and authors.

In addition, students completing the degree in Latin American studies are expected to acquire:

- reading and speaking ability of Spanish;
- the ability to engage in thoughtful dialogue about Latin America with educated Latin Americans;
- the ability to locate Latin American ideas, historical events, and cultural phenomena in the Latin American context from which they originate; and
- the ability to communicate competently in effective English prose.

REQUIREMENTS FOR ASSOCIATE IN ARTS DEGREE

1. Satisfaction of the regular transfer and college requirements for the Associate Degree. Contact the Counseling Office for additional information.
2. Demonstrated proficiency in Spanish (successful completion of Spanish 4 or higher, Spanish 101, and Spanish 27.)
3. A total of 24 hours from designated courses. Of these 24 hours, 9 must be in the area of social sciences (History 5 & 6 and Spanish 10) and 6 in the area of humanities (Spanish 12, 15, 25, or 26) with the remaining 9 in Spanish proficiency courses.
4. In addition, students may elect to take some of the breadth courses offered in the college including Anthropology 102 and Geography 2 or 10.
5. Latin American studies majors are strongly encouraged to include a study abroad semester or summer in their academic program. For further information concerning these programs abroad, contact Dean Paul Whalen in Academic Affairs at 719-6443.

ASSOCIATE IN ARTS DEGREE

REQUIRED CORE CURRICULUM		UNITS
History 5	History of the Americas I	3
	and	
History 6	History of the Americas II	3
Spanish 4	Intermediate Spanish II or higher	5*
Spanish 101	Spanish Language Laboratory	1
Spanish 27	Cultural Awareness through Advanced Conversation	3*
Spanish 10	Latin-American Civilization	3*
Two courses from the following:		6*
Spanish 12	Contemporary Mexican Literature or	3
Spanish 15	Great Books of Latin American Literature or	3
Spanish 25	Spanish American Short Story in Translation or	3
Spanish26	Understanding Latin American through Film	3

RECOMMENDED BREADTH ELECTIVES		UNITS
Anthropology 102	Human Ways of Life: Cultural Anthropology	3
Geography 2	Cultural Elements of Geography or	
Geography 10	Geography of the Americas	3

*Honors Program credit available by contract.

Students are encouraged to include a study abroad semester or summer in their academic program.

Faculty Advisors

Prof. Thomas F. O'Dea	Phone: 719-6452	Faculty Office: 3104
Prof. Sheila Williams	Phone 347-0551	Faculty Office: 3004

MUSIC

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed for students desiring the Associate in Arts Degree in Music. Students planning to transfer should consult with a counselor regarding the elective provisions. Non-transfer students should use the elective provisions to take related courses.

FIRST SEMESTER		UNITS
Music 201	Harmony I	3
Music 211	Musicianship I	2
Music 321	Elementary Piano I	2
	Performance Organization (Music 501, 521, 531, 541, 561, 563, 721, 741, 745)	2
	General Education	6
SECOND SEMESTER		
Music 161	Introduction to Electronic Music	3
Music 181	Applied Music I	.5
Music 202	Harmony II	3
Music 212	Musicianship II	2
Music 250	Music Performance Workshop	.5
	Performance Organization (see above)	1
	General Education	6
THIRD SEMESTER		
Music 121 or 122	Music History and Literature I or II	3
Music 182	Applied Music II	.5
Music 203	Harmony III	3
Music 213	Musicianship III	2
Music 250	Music Performance Workshop	.5
	Performance Organization (see above)	1
	General Education	6
FOURTH SEMESTER		
Music 121 or 122	Music History and Literature I or II	3
Music 183	Applied Music III	.5
Music 250	Music Performance Workshop	.5
	Performance Organization(see above)	2
	General Education	9

NURSING

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Los Angeles Pierce College offers an Associate in Arts Degree Nursing Program. The Registered Nurse Program is accredited by the Board of Registered Nursing and the National League for Nursing. The graduate is prepared to function as an entry level nurse. Upon completion of the prescribed curriculum, the graduate is qualified to apply for licensure as a registered nurse in the State of California.

Nursing students receive clinical experience concurrently with classroom instruction. Nursing faculty teach and supervise clinical experiences. Local hospitals and other health agencies provide the clinical facilities where students under supervision administer direct nursing care to patients. Students must provide their own transportation.

Students must first be admitted into the Nursing program before they may take nursing courses. A high school diploma, its equivalent, or an advanced degree is required for eligibility. Prerequisites are one year of high school algebra and one year of high school chemistry OR one semester of college algebra and one semester of College Chemistry with laboratory. Math 115 and Chem 51 are recommended. A grade of "C" or higher is required in all course work required by the major. Students must also be eligible for English 101, complete the Nursing Placement Test and meet specified health requirements.

Students are admitted for both Fall and Spring semesters. Application deadline for Fall semester is February 15, and for Spring semester is September 15. When the number of applicants exceeds the available openings, a point system is used for applicant selection. Details are available in the Counseling or Nursing Departments.

The following programs are also available for qualified individuals seeking career mobility: LVN-to-RN, LVN 30 Unit Option, Transfer and Challenge options, and Foreign Nurse Graduate placement. These programs provide a certificate of completion or an Associate in Arts degree with a major in Nursing. See the Department of Nursing for detailed information.

Portions of completed coursework from this program may be applied toward the attainment of a bachelor's degree in nursing. See your counselor for advice and information.

NURSING CURRICULUM

FIRST SEMESTER		UNITS
Nursing 400	Fundamentals of Nursing	4
Nursing 402	Preparation for Drug Therapy	1
Nursing 407	Gerontic Nursing	3
Nursing 408	Mental Health Nursing	1
Anatomy 1	Introduction to Human Anatomy	4
Psych 1	General Psychology I or	3
Psych 6	Human Behavior	3
SECOND SEMESTER		
Nursing 403	Medical-Surgical Nursing I	5
Nursing 405	Psychiatric Nursing	4
Physiol 1	Introduction to Human Physiology	4
Micro 1	Introductory Microbiology or	5
Mirco 20	General Microbiology	4

SUMMER SESSION		
English 101	College Reading and Composition I	3
	U.S. Government	3
THIRD SEMESTER		
Nursing 404	Maternity Nursing	4
Nursing 406	Medical-Surgical Nursing II	5
Physiol 18	Environmental, Metabolic and Nutritional Physiology	3
Soc 1	Introduction to Sociology or	
Soc 2	American Social Problems or	
Anthro 102	Human Ways of Life: Cultural Anthropology	3
	Physical Education Activity	1
FOURTH SEMESTER		
Nursing 414	Medical-Surgical Nursing III	5
Nursing 415	Pediatrics Nursing	4
Nursing 441	History, Trends and Issues of Nursing	1
Speech 101	Oral Communication I	3
	Humanities	3

Anatomy, Physiology, Microbiology, Psychology, Physiology 18, Sociology, and English 101 appear in the nursing curriculum in a particular sequence. A student must complete these courses either prior to or during the semester in which they are scheduled above. P.E. (1 unit), Math competency, U.S. Government, Speech, and Humanities may be completed any time prior to graduation. Students are strongly advised to complete Anatomy and Physiology prior to entering the program.

Requirements may be satisfied at LAPC or by equivalent courses elsewhere. Health Education is exempt for all Nursing students. For further information concerning course planning contact the Counseling and Nursing Departments.

GRADE REQUIREMENTS

All nursing courses must be completed with a grade of "C" or better. All the following required non-nursing courses must also be completed with a grade of "C" or better: Anatomy, Physiology, Psychology, Microbiology, English, Sociology/Anthropology, Nutrition and Speech.

Specific program policies governing grading, withdrawal, readmission, probation and dismissal are available in the Nursing Student Handbook and from the Department of Nursing.

The California Board of Registered Nursing may deny a license regulated by the Business and Professional Code, Section 480, on such grounds as: being convicted of a crime, acts of dishonesty, fraud or deceit, etc. (Refer to the Department of Nursing for further information.)

OFFICE ADMINISTRATION — GENERAL ADMINISTRATIVE

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Students may obtain an Associate in Arts degree in Office Administration by completing the courses shown in the following certificate program AND by satisfying all the requirements shown in the college catalog under Graduation Requirements and Graduation Plan B.

Certificate Program

The General Administrative Program prepares students for employment in business, government, and educational offices using automated systems and procedures. Emphasis is placed on the development of language skills and the use of computer-based word processing, spreadsheet, data base, and accounting software programs in the performance of office functions. In addition, students are prepared to assume general office duties and decision-making automated office responsibilities. Completion of this program enables the students to qualify for intermediate office positions and lays the foundation for entry into office management positions.

		UNITS
FIRST SEMESTER		
[1]Off Adm 2	Typewriting II	3
Off Adm 31	Business English	3
Off Adm 34	Business Vocabulary and Spelling	2
Off Adm 82	Microcomputer Software Survey in the Office	3
SECOND SEMESTER		
Off Adm 39	Word Processing: Keyboarding and Operations or	
Off Adm 84	Microcomputer Office Applications: Word Processing	3
[2]Off Adm 70	Human Relations in the Office	3
Off Adm 77	Microcomputer Accounting for the Electronic Office	3
Off Adm 83	Microcomputer Office Applications: Operating Systems	1
Off Adm 85	Microcomputer Office Applications: Spreadsheet	3
THIRD SEMESTER		
Off Adm 39	Word Processing: Keyboarding and Operations or	
Off Adm 84	Microcomputer Office Applications: Word Processing	3
[1]Off Adm 71	Universal Transcription	3
Off Adm 86	Microcomputer Office Applications: Data Base	3
FOURTH SEMESTER		
Off Adm 32	Business Communications	3
[3]Off Adm 78	Microcomputer Accounting Applications for the Electronic Office	3
[3]Off Adm 79	Word Processing Applications	3
Off Adm 911	Cooperative Education	1

[1]*See catalog description for course prerequisites and corequisites. Students who have not acquired the necessary skills should enroll in Off Adm 1 or 9.*

[2]*Offered in the Fall semester only.*

[3]*Offered in the Spring semester only.*

OFFICE ADMINISTRATION — LEGAL OFFICE PROCEDURES

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Students may obtain an Associate in Arts degree in Office Administration by completing the courses shown in the following certificate program AND by satisfying all the requirements shown in the college catalog under Graduation Requirements and Graduation Plan B.

Certificate Program

The Legal Program prepares students for employment in a legal office. Emphasis is placed on the development of language skills, the spellings and meanings of legal terminology, and the preparation of legal proceedings and cases. Extensive instruction in computer-based word processing programs and applications along with an introduction to other computerized office functions prepares students to obtain a position in an automated legal office.

		UNITS
FIRST SEMESTER		
[1]Off Adm 2	Typewriting II	3
Off Adm 31	Business English	3
Off Adm 34	Business Vocabulary and Spelling	2
Off Adm 82	Microcomputer Software Survey in the Office	3
SECOND SEMESTER		
Off Adm 39	Word Processing: Keyboarding and Operations or	
Off Adm 84	Microcomputer Office Applications: Word Processing	3
[3]Off Adm 70	Human Relations in the Office	3
Off Adm 77	Microcomputer Accounting for the Electronic Office	3
Off Adm 83	Microcomputer Office Applications: Operating Systems	1
THIRD SEMESTER		
[2]Off Adm 23	Legal Secretarial Procedures I	5
Off Adm 39	Word Processing: Keyboarding and Operations or	
Off Adm 84	Microcomputer Office Applications: Word Processing	3
[2]Off Adm 71	Universal Transcription	3
FOURTH SEMESTER		
[3]Off Adm 24	Legal Secretarial Procedures II	5
Off Adm 32	Business Communications	3
[3]Off Adm 79	Word Processing Applications	3
Off Adm 911	Cooperative Education	1

[1]*See catalog description for course prerequisites and corequisites. Students who have not acquired the necessary skills should enroll in Off Adm 1 or 9.*

[2]*Offered in the Fall semester only.*

[3]*Offered in the Spring semester only.*

OFFICE ADMINISTRATION — PROFESSIONAL SECRETARY

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Students may obtain an Associate in Arts degree in Office Administration by completing the courses shown in the following certificate program AND by satisfying all the requirements shown in the college catalog under Graduation Requirements and Graduation Plan B.

Certificate Program

The Professional Secretary Program prepares students for supervisorial and managerial positions in business offices. This curriculum is directed toward enabling a candidate to successfully complete an examination developed and administered by the Institute for Certifying Secretaries, a department of Professional Secretaries International (PSI), in order to attain the designation Certified Professional Secretary. Completion of this curriculum, acceptable scores on the CPS Examination, and two to four years of successful secretarial experience qualify the student for CPS certification.

		UNITS
FIRST SEMESTER		
Acctg 1	Introductory Accounting I	5
[1]Off Adm 2	Typewriting II	3
Off Adm 31	Business English	3
Off Adm 84	Microcomputer Office Applications: Word Processing	3
SECOND SEMESTER		
Bus 5	Business Law I	3
Mgmt 2	Organization and Management Theory	3
[3]Off Adm 78	Microcomputer Acctg Applications for the Electronic Office	3
Off Adm 85	Microcomputer Office Applications: Spreadsheet	3
THIRD SEMESTER		
Econ 2	Principles of Economics II	3
Off Adm 32	Business Communications	3
[2]Off Adm 71	Universal Transcription	3
Office Adm 83	Microcomputer Office Applications: Operating Systems	1
Off Adm 86	Microcomputer Office Applications: Data Base	3
FOURTH SEMESTER		
Off Adm 39	Word Processing: Keyboarding and Operations	3
[3]Off Adm 70	Human Relations in the Office	3
[3]Off Adm 79	Word Processing Applications	3
Off Adm 911	Cooperative Education	1

[1]*See catalog description for course prerequisites and corequisites. Students who have not acquired the necessary skills should enroll in Off Adm 1 or 9.*

[2]*Offered in the Fall semester only.*

[3]*Offered in the Spring semester only.*

PHOTOJOURNALISM

Also see Journalism

Associate in Arts Degree (An Option under Journalism)

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program offers a combination of theory and practice so that the student can become a successful newspaper or magazine photographer. Publication job opportunities are open to graduates with this training. Laboratory work includes taking the picture, developing the film and printing the photograph. In addition to the A.A. degree, a certificate of achievement as a photojournalism major is awarded to the student upon graduation.

1. Required Area Subjects

		UNITS
[2]Journal 100	Social Values in Mass Communications	3
[2]Journal 101	Collecting and Writing News	3
Journal 202	Advanced Newswriting	3
[1]Photo 10	Beginning Photography	3
Photo 11	Advanced Photography	4
Photo 16	Fundamental Commercial Photography	3
Photo 17	Introduction to Color Photography	3
Photo 20	Beginning Photojournalism	4
Photo 21	News Photography	(4-4)
Photo 27	History and Aesthetics of Photography	6

2. Elective Area Subjects

RECOMMENDED ELECTIVES		
Art 500	Introduction to Design	3
Cinema 3	History of Motion Pictures and Television	3
Cinema 18	Main Currents in Motion Pictures	3
Coop Ed	Cooperative Education	3
English 28	Intermediate Reading and Composition or/and	
English 101	College Reading and Composition I	3/6
English 102	College Reading and Composition II	3
Journal 108	Article Writing	3
Journal 217	Publication Laboratory	2
Journal 218	Practical Editing	3
Photo 12	Advanced Photographic Techniques	4
Pub Rel 1	Principles of Public Relations	3
	Shorthand (any)	
	Typewriting (any)	

3. General Education – Select 12 Units.

See graduation requirement section.

[1]*Photo 10 meets the graduation General Education Requirements, of Plan B, Part C.*

[2]*Journal 101 meets the graduation General Education Requirements, of Plan B, Part D1.*

PRE-ENGINEERING

Associate in Science Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

A student may receive an Associate in Science degree in pre-engineering by taking at least 36 units from the subjects listed below, completing 18 units in general education as per Plan B (see graduation requirements) and completing 60 units overall. This degree is designed for the student planning to transfer to a four year college or university as an engineering major.

Just taking any 36 units, however, will not qualify one for admission to Upper Division Engineering. Students are urged to see a counselor or the department chair for qualifying courses.

Subjects which qualify for the 36 Units

Chem 101, 102
Co Sci 513
Eng Gen 1 or 1A, 4 or 4A, 5, 9,
Eng Elec 22
Math 261, 262, 263, 270, 275, plus any CSU transferable mathematics course which is prerequisite to Math 261.
Physics 6, 7, 37, 38, 39

Students must have at least 1 course from 4 of the five categories above.

Students should see counselor or department chair for preferred courses from above list.

RELIGIOUS STUDIES

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

Core Courses: Minimum of 12 units required.		UNITS
Anthro 121	Anthropology of Religion, Magic and Witchcraft	3
English 250	Mythology and Literature	3
English 252	The English Bible as Literature	3
History 7	The World's Great Religions	3
Human 11	The Ancient World	6
Human 12	The Middle Ages and the Renaissance	6
Philos 22	Philosophies of the Orient	3
Philos 25	Survey of Western Religious Thought	3
Soc 15	Religion and American Society	3

Breadth Courses: Take the remaining 6 to 12 units from either core or breadth courses:		UNITS
Anthro 101	Human Biological Evolution	3
Anthro 102	Human Ways of Life: Cultural Anthropology	3
Anthro 103	Archaeology: Reconstructing the Human Past	3
Anthro 113	Field Archaeology	3
Anthro 123	American Folkways and Folklore	3
Anthro 132	North American Indians	3
Art 101	Survey of Art History I	3
Art 102	Survey of Art History II	3
English 101	College Reading and Composition I	3
English 203	World Literature I	3
English 204	World Literature II	3
Geog 2	Cultural Elements of Geography	3
History 1	Introduction to Western Civilization I	3
History 5	History of the Americas I	3
History 77	Hebrew Civilization II	3
Human 13	From the Reformation to the French Revolution	6
Human 14	The 19th and 20th Centuries	6
Ling 1 (Anthro 104)	Introduction to Language and Linguistics	3
Philos 3	History of Greek Thought	3
Philos 19	Contemporary Problems in Bioethics	3
Philos 20	Ethics	3
Soc 1	Introduction to Sociology	3
Soc 4	Sociological Analysis	3

General Education Requirement

A student graduating from Pierce with an AA degree and a major in Religious Studies is required to take 30 units of general education courses and at least 18 units of Religious Studies (see Graduation Requirements, Plan A).

SIGN LANGUAGE

(See Interpreter for the Deaf in this section)

SPANISH

The main objectives of the program in Spanish are to develop competence in the ability to understand, speak, read, and write Spanish, and to provide through the knowledge of Spanish an understanding and appreciation of their language and culture.

Students are placed in Spanish courses according to their years of previous study. In general, one year of high school Spanish is equated to one semester of Pierce College work. Thus recent high school graduates with one, two, three, or four years of high school Spanish will enroll in Spanish 1, 2, 3, or 4 respectively. Exceptions to this basic placement formula may be made after consultation with the Spanish Faculty. Native speakers should enroll in Spanish 4, 5, or 6.

All courses in Spanish, unless specifically stated, are taught in the foreign language. By the end of the first year, students attain mastery of the basic structure of the language and ability to converse on everyday topics as well as read and write on an elementary level.

In the second year, Spanish 3 and 4, emphasis is put on gradually raising the student's ability to speak, read, and write. Spanish 27, Cultural Awareness Through Advanced Conversation, combines with Spanish 4 to increase oral proficiency and prepares a student to live in a foreign country.

Spanish 5 and 6 stress composition and analysis and appreciation of many short literary selections, short stories, and films.

The courses taught in English, including Latin American Civilization, Understanding Latin America Through Film, Contemporary Mexican Literature, Great Books of Latin America, and The Spanish American Short Story, combine a panoramic overview with a close look at a specific country or topic.

Students are encouraged to participate in programs of study abroad during the summer or semester abroad program.

CAREER OPPORTUNITIES

Spanish is particularly useful in international business or trade, community or social service, and in foreign service. Majoring in Spanish is excellent preparation for graduate and professional study in law, medicine, government, social welfare, international relations, journalism, or education.

ASSOCIATE IN ARTS DEGREE

REQUIRED COURSES		UNITS
Spanish 4	Intermediate Spanish I or higher and	5
Spanish 101	Spanish Language Laboratory	1
Spanish 10	Latin-American Civilization	3
Spanish 27	Cultural Awareness through Advanced Conversation	3
Any two courses of the following courses:		6
Spanish 12	Contemporary Mexican Literature or	3
Spanish 15	Great Books of Latin America or	3
Spanish 25	Spanish American Short Story or	3
Spanish 26	Understanding Latin American Through Film	3
RECOMMENDED ELECTIVES		
Anthro 102	Human Ways of Life: Cultural Anthropology or	3
Ling 1	Introduction to Language and Linguistics	
History 5	History of the Americas I and	3
History 6	History of the Americas II	

THEATER

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degrees. See Graduation Requirements.

This program is designed to meet the requirements of the Associate in Arts Degree and to provide instruction in theater history, literature, acting, and technical stage work. Public performances of plays are given with opportunities for practical experience. Second semester students may participate in drama productions by enrolling in Theater 232, Play Production or Theater 250, Children's Theater.

FIRST SEMESTER		UNITS
[1]Theater 100	Introduction to the Theater	3
Theater 240	Voice and Articulation for the Theater	3
Theater 270	Beginning Acting	3
[2]Theater 342	Technical Stage Production or	1
[3]Theater 411	Costuming for the Theater	(3)
	General Education	3
SECOND SEMESTER		
Theater 232	Play Production or	1
Theater 250	Children's Theater Production or	(2)
Theater 292	Rehearsals and Performances	2
Theater 271	Intermediate Acting	3
[2]Theater 342	Technical Stage Production or	1
[4]Theater 411	Costuming for the Theater	(3)
	General Education	6
	Elective	3
THIRD SEMESTER		
Theater 110	History of World Theater	3
Theater 232	Play Production or	1
Theater 250	Children's Theater Production or	(2)
Theater 292	Rehearsals and Performances	2
Theater 273	Advanced Acting	3
Theater 450	Beginning Stage Make-up	1
	General Education	6
FOURTH SEMESTER		
Theater 115	History of the American Theater or	3
Theater 125	Dramatic Literature	(3)
Theater 232	Play Production or	1
Theater 250	Children's Theater Production or	(2)
Theater 292	Rehearsals and Performances	2
Theater 300	Introduction to Stage Craft	3
	General Education	3
	Elective	3

Recommended Electives: Theater 125, 130, 225, 243, 265, 400, 422.

[1]Meet Graduation General Education Requirement - Humanities.

[2]Prerequisite for Theater 232 - Play Production.

[3]May substitute Theater 422.

[4]Recommended one semester Theater 342 followed by one semester of any costume class.

Transfer Program to CSUN

(Courses to take at Pierce)

Theater 270, and one course from 271 or 273, 6 units from Theater 310 through 342, Theater 110 or 125, Theater 115.

THEATER — COSTUME OPTION

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degree. See Graduation Requirements.

		UNITS
FIRST SEMESTER		
[1]Theater 100	Introduction to Theater	3
Theater 270	Beginning Acting	3
Theater 300	Introduction to Stage Craft	3
[2]Theater 422	Applied Costuming for the Theater	2
	General Education	4
SECOND SEMESTER		
Theater 315	Introduction to Theatrical Scenic Design	3
[2]Theater 422	Applied Costuming for the Theater	2
Theater 450	Beginning Stage Make-up	2
	Electives	4
	General Education	4
THIRD SEMESTER		
Theater 310	Introduction to Theatrical Lighting	3
[2]Theater 422	Applied Costuming for the Theater	2
	General Education	6
	Electives	4
FOURTH SEMESTER		
Speech 101	Oral Communication I	3
Theater 342	Technical Stage Production	2
Theater 400	Costume Periods and Styles	3
	Electives	4
	General Education	3

[1]Meets Graduation General Education Requirement Humanities.

[2]May substitute Theater 411 Costuming for the Theater.

Transfer Program to CSUN

(Courses to take at Pierce)

Theater 270, and one course from 271 or 273, 6 units from Theater 310 through 342, Theater 110 or 125, Theater 115.

THEATER — TECHNICAL THEATER OPTION

Associate in Arts Degree

Associate Degree programs DO NOT necessarily constitute the first two years of a program leading to a bachelor's degree.

Students entering July 1987 or later must meet competency requirements for AA or AS degree. See Graduation Requirements.

		UNITS
FIRST SEMESTER		
[1]Theater 100	Introduction to the Theater	3
Theater 270	Beginning Acting	3
Theater 300	Introduction to Stage Craft	3
Theater 342	Technical Stage Production	2
	General Education	4
SECOND SEMESTER		
Theater 315	Introduction to Theatrical Scenic Design	3
Theater 342	Technical Stage Production	2
Theater 450	Beginning Stage Make-up	2
	Elective	2
	General Education	6
THIRD SEMESTER		
Theater 310	Introduction to Theatrical Lighting	3
Theater 342	Technical Stage Production	2
	Elective	4
	General Education	6
FOURTH SEMESTER		
Speech 101	Oral Communication I	3
[2]Theater 411	Costuming for the Theater	3
	Electives	6
	General Education	3

[1]Meets Graduation General Education Requirement Humanities.

[2]May substitute Theater 422. Costume majors consult with department chairperson for correct courses.

Transfer Program to CSUN

(Courses to take at Pierce)

Theater 270 and one course from 271 or 273, 6 units from Theater 310 through 342, Theater 110 or 125, Theater 115.

Cooperative Work Experience Education

(CWEE) combines on-the-job experience with regular classroom instruction. It is designed to expand skills and knowledge and to improve self understanding by integrating classroom study with planned supervised work experience. CWEE is based on the principle that well educated individuals develop most effectively by incorporating related education and work experience. These structured experiences in business, industry, government and human services bring an enrichment to college studies which enhances the student's total development. It is called CWEE because the educational objectives are carefully planned and coordinated with the student's employer to provide realistic employment experience. The objectives are:

1. To provide opportunity for the student to secure employment on a part-time or full-time basis.
2. To gain realistic work experience that is meaningfully related to the student's college study program.
3. To provide the student opportunity to acquire knowledge, skills, and attitudes essential for successful employment.

Benefits of Cooperative Work Experience Education

The student:

1. Has the opportunity to learn or improve employment skills under actual working conditions.
2. Gains perspective on career goals through application of classroom theory to "real life experience."
3. Builds self-identity and confidence as a worker through individual attention given by instructor/coordinators and employers.
4. Has opportunities to test personal abilities in work environments.
5. Has a more realistic approach to the job market.
6. Will gain a better understanding of human relations.
7. Will learn to apply Management By Objectives (MBO).
8. May refer to work experience education on future job applications.
9. Benefits financially while learning.
10. Can begin a career earlier.

Student Qualifications

There are two plans for CWEE:

Parallel Plan:

1. Pursue a planned program based on measurable learning objectives agreed to, with CWEE instructor/ Coordinator.
2. Be enrolled in no less than 7 units (including CWEE units).
3. During summer sessions be enrolled in at least 1 other class in addition to CWEE.

Occupational Work Experience (Parallel Plan)
Hours by Arrangement, 1-4 units
Prerequisite: Approval of Work Experience Coordinator.

A program of on-the-job learning experience for students employed in a job related to an occupationally oriented major in which no work experience course is offered. May be repeated three times for a maximum of 16 units. To receive credit a student must complete a minimum of seven units during the semester, including work experience.

General Work Experience (Parallel Plan)

Hours by Arrangement, each course 1-3 units

Prerequisite: Approval of Work Experience Coordinator

A program of on-the job learning experiences designed to assist the student in developing occupational effectiveness. Employment need not be related to the student's vocational or occupational major. One unit of credit is earned for each 75 hours of paid employment or 60 hours of volunteer work, with a maximum of 3 units. To receive credit a student must complete 7 units, including work experience. During summer session one other course must be taken concurrently. May be repeated once for a total of 6 units.

OR

Alternate Plan:

1. Pursue a planned program based on measurable learning objectives agreed to, with the CWEE instructor/Coordinator.
2. Have earned at least seven units of class work before enrolling.

Occupational Work Experience (Alternate Plan)
Hours by Arrangement 1-8 units
Prerequisite: Approval of Work Experience Coordinator

A program of on-the-job learning experiences which enables the student to attend college full-time one semester and work full-time the following semester. The work must relate directly to the student's educational goal and he/she must have satisfactorily completed at least seven units of credit and may not be enrolled concurrently in more than one other course. Eligibility determined by regulations in Title V, California Administrative Code. May be repeated three times for a maximum of 16 units.

General Work Experience (Alternative Plan)

Hours by Arrangement, 1-6 units

A program of on-the-job learning experiences which enables the student to attend college full-time one semester and work full-time the following semester. Under this plan the work need not relate directly to the student's educational goal. The student must have completed at least 7 units of credit and may not be enrolled concurrently in more than one other course. Eligibility for enrollment will be determined in accordance with applicable regulations contained in Title V, California Educational Code.

(Students may switch between plans until they have earned seven units of other class work.)

Cooperative Education Credit Guide

CALIFORNIA STATE UNIVERSITY: APPROVED COOPERATIVE EDUCATION SUBJECT AREAS

Los Angeles Community College District policy provides that a maximum of eight (8) semester units in Cooperative Education courses completed in the subject areas listed below may be applied toward the California State University 56 unit admission requirement.

Accounting
Administration of Justice
Afro-American Studies
Agriculture
Air Conditioning Technology
Aircraft Electronics Technology
Animal Husbandry
Anthropology
Architecture
Art
Astronomy
Aviation Maintenance Technician
Biology
Botany
Broadcasting
Business
Business Data Processing
Chemistry
Chicano Studies
Child Development
Cinema
Commercial Art
Computer Maintenance Technician
Computer Science – Information Technology
Computer Technology
Dairy Husbandry
Drafting
Economics
Education
Electronics
Electronics Technician
Electronics Technology
Engineering
English
Environmental Science
Family and Consumer Studies
Fire Science
Foreign Languages
Geography
Geology
Health
History
Humanities
Industrial Arts
Jewish Studies
Journalism
Law
Linguistics
Management
Mathematics
Mechanical Drafting
Medical Record Science
Merchandise Display (Visual Merchandising and Display)
Merchandising (Marketing)
Meteorology
Microbiology
Mineralogy
Music
Natural Resources Management
Nursing
Oceanography
Office Administration (Secretarial Science)
Philosophy
Photography
Photography, Commercial (Photography-T)
Physical Education
Physics
Physiology
Political Science
Psychology
Public Service
Real Estate
Recreation
Respiratory Therapy
Restaurant Management
Sign Graphics
Social Science
Sociology
Speech Communication
Statistics
Technical Illustration
Television
Theater
Transportation
Urban Planning
Water Systems
Technology
Zoology

TRANSFER REQUIREMENTS

TRANSFER TO OTHER COLLEGES

The requirements of the various colleges and universities vary so greatly that it is not possible to prescribe a program of work which will apply to all. **Therefore, although many courses offered at Pierce College are of collegiate level, special identification is given to those courses which are accepted for transfer at the University of California at Los Angeles.**

In general, these procedures should be followed:

1. Students should **consult the catalog of the college to which they intend to transfer.** They should choose those courses at Pierce in accordance with the requirements of the college desired, as noted in its catalog.
2. They should consult with a Pierce College Counselor.

The College Library and the Career Center have many catalogs on file for reference. Students should obtain a catalog for their personal use directly from the Registrar of the College which they plan to attend.

Some courses do not carry credit toward graduation from a university. Students should not expect college or university credit for courses unless they know definitely that such courses will be accepted by the institution in question.

Transfer requirements are prescribed by the receiving institution.

TRANSFER TO EITHER UNIVERSITY OF CALIFORNIA OR CALIFORNIA STATE UNIVERSITY SYSTEM—IGETC

The Intersegmental General Education Transfer Curriculum (IGETC) is an agreement by the California Community Colleges, the California State Universities, and the University of California on a common transfer plan. The IGETC consists of a series of courses which, if completed prior to transfer, allows community college transfer students the opportunity to satisfy the lower-division general education requirements for any campus of the CSU or UC, without the need, after transfer, to take additional lower-division courses.

The IGETC is advisable for California Community College students who have not yet decided on a major or a particular campus and who want to keep their options open before making a final decision about transferring into either UC or CSU. Students who are pursuing UC majors that require extensive lower-division preparation to be admitted to the major may find the IGETC inadvisable - See Counseling Office for information.

The IGETC can be certified for California community college transfers who have also completed transfer units at a CSU, UC or independent college *provided that the student has completed most of the transfer units at one or more California community colleges.* A California community college student is usually defined as one who has completed or will complete 30 or more total units at a California community college. Students who initially enroll at a UC campus, then leave and attend a community college, and subsequently return to the same campus are considered "readmits" by the University. Such student cannot use the IGETC - this is true at all UC campuses. However, students who enroll at a UC campus, then leave and attend a community college, and subsequently return to a *different* UC campus may be able to use the IGETC, but students need to check with the campus they wish to attend.

Since the IGETC must be completed in its entirety prior to transferring, students who do not complete it will be subject to the specific general education pattern at the UC campus to which they are transferring. Students who are CSU bound will still have the option of completing the CSU certified plan.

UC ELIGIBILITY: Students who were not eligible to enter the University of California at the time of high school graduation may become eligible to enter the University if they complete 56 UC transferable units (some UCs require 60 units) and satisfy their high school subject deficiencies. To insure that you have no subject deficiencies, complete these courses, all with a grade of "C" or better: 1) English 101; 2) Math 125 and a geometry class, or a more advanced math course requiring Math 125 as a prerequisite (Statistics 1 is acceptable): 3) one additional course selected from United States History, lab science, or foreign language.

PLEASE NOTE: Although a course may be listed in more than one subject area, a single course may be used just once. Only "C" grades or better will be accepted (no C-), and credit/no credit courses are acceptable only if the college catalog defines credit as equivalent to a letter grade of "C" or better (as it does at Pierce).

CERTIFICATION: IGETC must be certified PRIOR to transfer. Certification of these units is not automatic, and no partial certification will be allowed. Certification must be requested in the Graduation Office when the student completes all of the IGETC requirements. Students who leave the college, breaking continuous enrollment, will be placed under the IGETC plan in effect for the year that they return.

COURSES COMPLETED AT OTHER COLLEGES: Courses that are completed at any **accredited** college can be used in the IGETC certification. Students should be aware, however, that coursework from other California community colleges will be applied in the IGETC category determined by the original college. Students may petition in the Graduation Office to use courses taken at UC, CSU, private or out of state schools. Petitions will be evaluated to determine if courses are equivalent to those on the Pierce IGETC plan.

AP SCORES: AP scores of 3 or higher can be used to satisfy and IGETC subject area except the Critical Thinking/English composition and the communication requirement. Even though credit for more than one course can be awarded by Pierce for AP scores of 3 higher, only one course in the subject for which the AP test was taken can be used on the IGETC.

DOUBLE-COUNTING: UC will allow requirements completed as preparation for the major to be used in the IGETC wherever they appear.

PROFICIENCY IN A LANGUAGE OTHER THAN ENGLISH: Verification of this requirement will be based on official records (either high school or college) indicating completion of coursework (with grades of "C" or better) equivalent to two years in high school of the same foreign language. Students can also meet this requirement by providing evidence of appropriate scores on AP exams (scores of 3 or more are acceptable)

or by earning a minimum score to 500 on the College Board Achievement Test.

COURSES TAKEN AT FOREIGN INSTITUTIONS: These courses will NOT be permitted for certification on the IGETC.

Some ITV course work may be used - see a counselor.

The following list is for students beginning the academic year 1994-95:

AREA 1 - ENGLISH COMMUNICATION

CSU - 3 courses required, one from each group below. UC - 2 courses required, 1 each from Group A & B.

Group A: English Composition, 1 course, 3 semester units, or 4-5 quarter units
English 101

Group B: Critical Thinking - English Composition, 1 course, 3 semester units, or 4-5 quarter units.
Prior to completing either of these courses, a student must have completed English 101 with a grade of "C" or higher.
English 103
Philosophy 201.

Group C: Oral Communication **(CSU requirement only)**
1 course, 3 semester units, or 4-5 quarter units
Speech Communications 101 or 104.

AREA 2 - MATHEMATICAL CONCEPTS and QUANTITATIVE REASONING

(1 course, 3 semester units, or 4-5 quarter units)

Mathematics 227 (225)**, 235**, 236**, 245**, 255**, 260**, 261**, 262**; Statistics 1**.

AREA 3 - ARTS and HUMANITIES

(3 courses required, at least 1 from each group below. 9 semester units, or 12-15 quarter units)

Group A: Arts

Art 101, 102, 103, 111, 500**, 501**, 502**; Music 111, 112, 121, 122; Cinema 3, 18; Photography 27; Physical Education 802, 803, 804

Group B: Humanities;

Anthropology 104 (same as Linguistics 1), 105, 121, 123; English 203, 204, 205, 206, 207, 208, 209, 211**, 212**, 213 (same as Theater Arts 125), 214, 215, 216, 219, 239, 240**, 250, 252, 270; French 3, 4, 5, 6; German 3, 4, 5, 6; History 1, 2, 7; Humanities 3, 6, 11, 12, 13, 14, 30, 31, 60; Italian 3, 4, 5, 6; Japanese 3; Linguistics 1 (same as Anthropology 104); Philosophy 2, 3, 4, 19, 20, 22, 24, 25; Sociology 11, 15; Spanish 3, 4, 5, 6, 12, 15; Speech Communications 130; Theater Arts 100, 110, 115, 125 (same as English 213).

AREA 4 - SOCIAL and BEHAVIORAL SCIENCES

(3 courses from at least 2 disciplines. 9 semester units, or 12-15 quarter units)

Anthropology 102, 103, 112, 132; Economics 1, 2, 10 (same as History 15); Environmental Science 17 (same as Geography 14); Geography 2, 5, 7, 8, 10, 12, 14 (same as Environmental Science 17); History 3, 4, 5, 6, 8, 11***, 12***, 13***, 14***, 15 (same as Economics 10), 20, 21, 30, 41***, 42***, 50, 52*, 77; Law 3; Political Science 1*, 2, 7, 14, 30*, 35 (American Foreign Policy); Psychology 1**, 6**, 11, 13, 14, 18, 52; Sociology 1, 2, 4**, 6, 13, 18**, 30.

AREA 5 - PHYSICAL and BIOLOGICAL SCIENCES

(2 courses, 1 from each group, at least 1 must include a laboratory. Lab courses are underlined. 7-9 semester units, or 9-12 quarter units. The lab selected must correspond to the lecture course used.)

Group A: Physical Sciences

Astronomy 1**, 2**, 3**; Chemistry 51**, 60**, 70**, 101, 102, 201, 211**, 221**; Environmental Science 1, 7 (same as Geology 10), 18 (same as Geography 9); Geography 1, 3 (same as Meteorology 3), 9 (same as Environmental Science 18), 15, 17; Geology 1, 2**, 6, 7**, 10 (same as Environmental Science 7), 22; Meteorology 3 (same as Geography 3), 4; Oceanography 1, 10; Physical Science 1**, 4**, 14**; Physics 6**, 7**, 11**, 12**, 37**.

Group B: Biological Sciences

Agriculture 901** (same as Environmental Science 5); Anatomy 1; Anthropology 101, 111; Biology 3**, 6, 7, 10, 11**, 25**; Environmental Science 2**, 5** (same as Agriculture 901); Microbiology 1**, 20**; Oceanography 2** or 12** (these courses are the same), 14; Physiology 1**, 8**, 9**; Psychology 2.

LANGUAGE OTHER THAN ENGLISH (UC Requirement Only) Proficiency equivalent to 2 years of high school foreign language study in the same language with a grade of "C" or better. At Pierce, this requirement can be satisfied by completion of level 2 in a foreign language. Choose from: French 2; German 2; Italian 2; Japanese 2; Spanish 2.

If language level 3 or higher is used to satisfy this requirement, it may not be used in Area 3 Group B: Humanities.

**Courses designated with one asterisk are listed in two subject areas, but may be counted in one area only.*

***Indicates that UC course credit may be limited. Please see Pierce College Counseling Office for UC limit checksheet.*

****Indicated course may be counted in one area only and UC course credit may be limited.*

NOTE: Underline indicates that a course is a lab course.

CSU GRADUATION REQUIREMENT IN U.S. HISTORY, CONSTITUTION and AMERICAN IDEALS (Not part of IGETC, but may be completed prior to transfer.) 2 courses, 1 from each group. 6 semester units (12 quarter units). Courses used to meet this requirement may not be used to satisfy requirements for IGETC.

Group A: Political Science 1, 30

Group B: History 11, 12, 13, 14, 41, 42, 52.

The IGETC Plan is subject to periodic revisions. Consult Counseling Office for current information.

ADMISSION TO THE UNIVERSITY OF CALIFORNIA

1. **Without high school deficiencies.**
   Even if eligible from high school, it has become exceedingly difficult to transfer from a community college without having completed 56 transferable units. Students should follow the IGETC or when appropriate the UC general education pattern, and where specified, complete the prerequisites of their designated major. The minimum grade point average to be eligible is a 2.4, but many of the campus look for a much higher grade point average.
2. **With high school deficiencies.**
   Applicants who were not eligible to enroll at the time of high school graduation may make themselves eligible.
   If applicants were not eligible at the time of high school graduation because of low scholarship or low scholarship and a lack of required subjects, they will become eligible with advanced standing if they have earned a 2.4 average in 56 units of college-level work transferable to the University of California and have completed one of the following options:
   Option 1: One UC Transferable course in mathematics**, English 101, and one course selected from U.S. History, a laboratory science, or a foreign language, all with grades of "C" or higher.

   The course in mathematics must assume a proficiency level equivalent to three years of high school mathematics (i.e. elementary algebra, advanced algebra, and geometry). The course may be trigonometry or a more advanced course in mathematics or statistics for which advanced algebra is a prerequisite. These mathematics courses may not be transferable. However, all of the other courses discussed above must be transferable to the University.

   Option 2: Appropriate college courses, with grades of "C" or higher, in the a-f subjects an applicant lacked. Up to 2 units of high school work in a-f subjects** will be waived, but transfer applicants must have satisfied the freshman admission requirements in English and mathematics.**A unit is equivalent to a one-year course.

ADMISSION TO CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

Applicants who were eligible for admission at the time of high school graduation may apply for advanced standing at the university in accordance with admission requirements in effect at the time they were graduated, if they were full-time students in an accredited college and earned at least a "C"average in college work. Those who do not complete 56 units of CSU transferable college work may be required to take the SAT or ACT entrance examination as a condition of admission. If they were not full-time college students, they may be required to meet the admission requirements applied to recent high school graduates.

Applicants who were not eligible to enroll at the time of high school graduation may make themselves eligible. In order to qualify for junior standing at California State University, Northridge, an applicant must have completed a minimum of 56 transferable units at accredited institutions with a "C" average in all work undertaken. As of Fall 1986 all students new to college must also have the equivalent of four years of high school English and two years of high school mathematics (algebra and geometry or higher).

Students intending to work for a degree at the California State University, Northridge should plan their work to meet the lower division requirements.

ADMISSION TO THE INDEPENDENT CALIFORNIA COLLEGES AND UNIVERSITIES

California's fully accredited independent colleges and universities provide a host of options at undergraduate, graduate and professional levels for students planning to continue their education beyond community college.

Admission Policies

Students who transfer to independent colleges or universities find they are given academic credit for most, if not all, of their community college studies.

Some colleges and universities stipulate a certain number of completed units before considering students eligible for transfer. Others do not and will accept students at any time. The requirements are outlined in the college catalogs, available upon request from the respective college's Office of Admissions. Many of these catalogs are available in the Pierce Career Center library. The Counseling Office has some advisement sheets available outlining the requirements for various schools including:

Art Center College of Design
California Lutheran College
Pepperdine University, L.A. and Malibu Campuses
U.S.C. – Letters and Sciences and Business Administration

Independent institutions invite you to make an appointment with their Office of Admissions in order to discuss your transfer opportunities on a personal basis.

REQUIREMENTS FOR STUDENTS PLANNING TO TRANSFER TO A FOUR-YEAR INSTITUTION

Two principal kinds of requirements should be met in order to attain full junior standing at the University of California or other institutions maintaining equivalent standards to which the student expects to transfer. These are:

1. The completion of the lower division prerequisites for upper division majors and minors. These vary according to the institution of higher education in which the student expects to enroll.
2. The completion of a general education pattern required by the receiving institution.
   A. The patterns for UCLA are listed on subsequent pages.
   B. Patterns for California State Universities and Colleges are as follows:
      (1) The **PIERCE COLLEGE GENERAL EDUCATION CERTIFIED PLAN** authorized by state legislation for students transferring to the California State

University and Colleges is presented below. (How to meet 39 units of General Education) Certification will be provided upon request for the student who completes all or a portion of this pattern. The State Universities and Colleges will accept this certification.

(2) Students may elect to complete the general education plan of the particular California State College or University which they plan to attend.

C. For institutions other than the above, information is available in the Counseling Office.

In addition to examining the information offered in this catalog, students expecting to transfer to four-year institutions should consult the catalog of these institutions regarding specific requirements for upper division standing and should consult a counselor. **RECOMMENDATION! If you plan to transfer to a four-year school, see a counselor during each semester.**

HOW TO MEET 39 UNITS OF GENERAL EDUCATION — BREADTH REQUIREMENTS FOR STUDENTS TRANSFERRING TO THE CALIFORNIA STATE UNIVERSITY and COLLEGES

Certified Plan

In revision — See Counseling Office

Students intending to transfer to the CSU system now have a choice of general education plans. The IGETC plan is accepted at both CSU and UC schools. The Certified Plan is accepted only at CSU schools. Students who are certain they will transfer to a CSU school should follow the Certified Plan. Students uncertain about whether they will transfer to a CSU or a UC school, or who want to keep their options open, should follow the IGETC Plan on page 68. Transferring students can consult a counselor for further information.

All students who are currently following a CSU Certification Plan are now obligated to follow the 1993-94 Plan or subsequent plans.

CSU Certification Plans prior to Fall 1993 are no longer useable. There have been changes and additions to the Plan. This was done by the Board of Trustees to the California State University System. Courses taken on previous plans, but not found on the Fall 1993 Plan (or subsequent plans), will be honored in the category taken. To be certified, a student must comply with the new regulations/ format of the Fall 1993 Plan or subsequent plans.

Please come to the Counseling Office to obtain the new plan.

Associate Degrees with Certified Plan

Students who wish to receive an Associate Degree from Pierce College while following the Certified Plan should request evaluation according to Plan A, (see Graduation requirements in previous section) when petitioning for graduation.

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE LOWER DIVISION MAJOR REQUIREMENTS

The following is a list of the Majors offered at CSUN with the courses required by Pierce for students to be properly prepared to begin their Major as a Junior at CSUN.

SUMMARY OF MAJOR REQUIREMENTS
1993-1994

Courses listed may have specific prerequisites or corequisites. Please consult the course descriptions located in the catalog. Students are advised to check with a counselor each Fall semester for possible requirement changes.

Anthropology: Anthropology 101, 102

Art: Art 101, 102, 201, 202, 501, 502, electives (6-10 units, excluding Art 103)

Biology: All options: Mathematics 240 and 245 or 260; Biology 6, 7; Chemistry 101, 102; Physics 6AB, 7AB; (Physics lab 6B and 7B are not required in Environmental Option).

Cellular and Molecular Option: Recommended: Mathematics 261, 262;

Environmental Option: Chemistry 211, Mathematics 261 and 262 (B.S.: omit Mathematics 262)

Medical Technology Option: After transfer.

Microbiology Option: Recommended: Mathematics 261 and 262 (B.S.: Computer Science 501, Mathematics 261-262, Mathematics 225 or 227);

General Option: Mathematics 255 or 261; Physiology 1 or 3;

Marine Biology Option: Chemistry 211 and Mathematics 255.

Business Administration: All options: Accounting 1, 2; Economics 1, 2; Business 5 or Law 1; Mathematics 255 or 235 or 261; Computer Science 501 and 530 or pass CSUN Computer Literacy exam;

Accounting: Add Mathematics 255 or 261 or 236;

Management Information Systems: Computer Science 507, 515; Mathematics 255 or 261 or 236;

Management Systems Analysis: Computer Science 507, 515 or 513.

International Business: Foreign Language, Level 4. Grade of "C" or better required for core courses.

Business Education: (Credential Program) Accounting 1, 2; Economics 1, 2; Business 5 or Law 1; Mathematics 235; Computer Science 501 and 530 or pass CSUN Literacy exam, proficiency in keyboarding.

Chemistry: B.S., Chemistry: Chemistry 101, 102; Mathematics 261, 262, 263, 275; Physics 37, 38, 39.

B.A., Chemistry Option: Chemistry 101, 102; Mathematics 261, 262; Physics 6, 7;

Biochemistry Option: Add Biology 6, 7 to Chemistry B.S.

Chicano Studies: After transfer.

Child Development: Psychology 2 or Physiology 1; Mathematics 225 or Statistics 1 (not required in Child Mental Health Specialist Option); appropriate electives.

Child Mental Health Specialist: (Selective Admission) Add Psychology 2.

Communicative Disorders: Speech Communication 121 or American Sign Language 1 or Spanish 1; Biology 3; Mathematics 225 or 227 or Statistics 1.

****Computer Science:** Computer Science 506 and 507, 516, 532, 536, 546; Mathematics 261, 262, 270; Philosophy 9; proficiency in the programming language FORTRAN is required. Select one sequence from: Biology 6, 7 or Chemistry 101, 102 or Physics 37, 38. A grade of "C" or better in English 101 is required. Additional coursework in an area of concentration. (Please see a counselor.) A grade of "C" or better is required in all major courses. Because Computer Science is a dynamic field with major course revisions occurring frequently, students are advised to see a counselor each semester. A Computer Science qualifying test is required as a condition of admission to the Junior level Computer Science courses. Consult CSUN (885-3398) for details.

****Deaf Studies:** American Sign Language 1, 2, 3;

Communication Sciences and Services: Add Speech Communication 121; electives include American Sign Language 4, 17;

Language and Culture: Add American Sign Language 4; Speech Communication 121.

Drama: See Theater

****Earth Science:** Geology 1 or 4 or 6; Chemistry 101, 102; Geography 3 or Meteorology 3; Physics 6, 7; Minerology 1. Select one: Mathematics 225 or 227 or Mathematics 255 or 261.

Economics: Accounting 1, 2; Economics 1, 2; Mathematics 235 or 261 or 255; Philosophy 7 or 9 or Mathematics 270 or Mathematics 236. (Students planning to attend graduate school should take Mathematics 261-262 and Mathematics 270 instead of Mathematics 235). Grade of "C" or better reqired in the above core classes.

***Engineering:** Chemistry 101; General, Engineering 4, 5, 9; Mathematics 261, 262, 263, 275; Physics 37, 38; Computer Science 507, 513, and either Chemistry 102 or Physics 39. A grade of "C" or better required in **all courses which are prerequisites to other courses.**

English: Literature Option: Two from English 211, 212, 213; **and** two courses from English 205, 206, 207, **or** 208;

Writing Option: English 127; one from English 211, 212, 213; one from 211, 212, 213, 205, 206, 207, **or** 208. Students are encouraged to take a foreign language.

Family Environmental Sciences: The following options and concentrations require family and consumer classes. Those classes are not offered at Pierce College. They may be taken at L.A. Valley College or L.A. Mission College or after transfer.

Business Option: Consumer Resource Management Economics 1, Business 5 or Law 1, Computer Science 501, Journalism 100, 101.

Business Option: Textile Apparel and Fashion Merchandising - Chemistry 51 or 60; Business 5 or Law 1

Business Option: Food Server/Food Service - Biology 3 or 6; Microbiology 1 or 20; Physiology 1; Chemistry 101, 102, 211; Business 5 or Law 1; Computer Science 501, 507; Journalism 100, 101.

Business Option: Interior Design - Art 502, 201, 209; Speech Communication 101, Business 5 or Law 1; Accounting 1; Economics 1.

Dietetics Option: Biology 3 or 6; Microbiology 1 or 2; Physiology 1; Chemistry 101, 102, 211; English 101; Psychology 1; Sociology 1; Speech Communication 101.

Additional Option: Teaching: See Dept. after transfer.

French: French 3-6; English 203, 204.

Geography: Select one course from each of the two categories:

Physical: Geography 1 **or** 3 or Meteorology 3;

Human: Geography 2 **or** 5 **or** 7.

****Geology: Option in Geology:** Geology 1, 2, 6, 7; Mineralogy 1; Chemistry 101, 102; Mathematics 261; Physics 6 and 7 **or** 37, 38, 39; select one course from the following: Mathematics 262 or 225 or 227 or Physics 37 or 38 or 39.

Option in Geophysics: Chemistry 101, 102; Computer Science 507, 513; Geology 1, 6; Mathematics 261, 262, 263, 275; Physics 37, 38, 39.

German: German 3, 4, 5; English 203, 204.

****Health Sciences: All Options:** Psychology 1; Sociology 1 (not required by Phys. Therapy and Environ. & Occup. Hlth.);

Environmental & Occupational Health: Biology 3 **or** 5 **or** both 6 **and** 7; Microbiology 1 or 20; Physiology 1, or 3 or 9; Chemistry 101, 102, 211; Physics 6, 7; Mathematics 240 and 245, (or 260);

Health Administration: Biology 3; Physiology 1; Mathematics 235, Accounting 1, 2;

Health Education: Biology 3 **or** 5, 9; Physiology 1; Chemistry 51 **or** 60; Health 9 or 10 or 11; Mathematics 240 and 245. (Credential students must take Anatomy 1 instead of Biology 9).

***Physical Therapy:** Biology 3; Anatomy 1 **and** Physiology 1; Physics 6, 7; Mathematics 240, 245, Computer Science 501; Chemistry 51; and Chemistry 104 after transfer at CSUN **or** Chemistry 101 and 102 here at LAPC. **NOTE:** This is an Impacted Major. (Please see section on Impacted Majors).

***School Nursing/Nursing Services:** (Limited to Registered Nurses) Health 12; Biology 3; Chemistry 51 or 60, Mathematics 225 or 227 or Statistics 1;

***Radiologic Technology:** Biology 3; Anatomy 1 and Physiology 1 or Physiology 6; Physics 6, 7; Mathematics 240, 245; Chemistry 51 or 60;

History: History 1 **or** 2, 11 **or** 12 **or** 17 **or** 18, 5 **and** 6, one other appropriate History course (See a counselor).

****Humanities:** Humanities 30; one course from Art 101, 102, 103; one course from Music 111 or 112; Foreign Language 1,2 or pass exam at CSUN.

Journalism: Journalism 100 or 105, 101. Only 9 units of transfer Journalism units will count toward CSUN graduation.

Kinesiology: Biology 3, Anatomy 1 and Physiology 1 or 6, and five appropriate activity courses. (Consult CSUN P.E. Dept.).

Exercise Science Option: Physics 6 or 21; Chemistry 51 or 101.

Athletic Training Option: Health 12. **Certification by National Athletic**

Trainers Association: Health 9 or 10 or 11; Physics 11 or 12 and 14; Psychology 1; Family & Consumer Study 21.

Leisure Studies: Anatomy 1; Health 12

Liberal Studies: Credential Program: See independent checksheet.

Non-Credential Program: See counselor and request information from articulation agreement.

****Linguistics:** Consult catalog for foreign language requirement.

Mathematics: Mathematics 261, 262, 263, 270; Philosophy 9; Physics 37, 38; Computer Science 506 and 507.

Music: Music 201, 202, 203, 121, 122, 222 and one appropriate ensemble course each semester. Musicology should take French 1 and 2 or German 1 and 2.

****Pan-African Studies:** History 41, 42; Sociology 11; Psychology 8.

Philosophy: Philosophy 3 and 4, 7 or 9.

Physical Education: See **Kinesiology**

Physics: Mathematics 261, 262, 263; Physics 37, 38, 39; Chemistry 101.

Option I, Physics: Add Chemistry 102, Mathematics 275;

Option II, Applied Physics: Mathematics 275;

Option III, Mathematical Physics: Add Mathematics 275;

Option IV, Astrophysics: Add Mathematics 275.

****Political Science:** Political Science 1, 2, 7.

Psychology: Mathematics 225 or 227 or Statistics 1, Psychology 1, 2.

****Radio-TV-Broadcasting:** Journalism 100 or 105, Cinema 3.

Recreation: See **Leisure Studies.**

****Religious Studies:** History 7 or, Philosophy 22 and 25; English 252; Philosophy 20 or Sociology 15.

Sociology: Sociology 1 and 4; Mathematics 225 or 227 or Statistics 1.

Spanish: Spanish 3, 4; English 203, 204.

Speech: Communication Studies Option: Journalism 100 or 105, Cinema 3;

General Major Option: Speech Communication 130 or 121.

Theater: Theater 100, 270, 271, 273, 300, 310, 411, 450.

Urban Studies: Geography 8, Economics 1, 2, (or Economics 300 after transfer);

Techniques Option: Add Computer Science 507 and 516 or 508 and 515.

Political-Humanistic Option: Add History 42.

***Additional checksheet for this major is available in the Counseling Office. Students are advised to acquire this additional checksheet.**

****Other lower division course(s) required after transfer.**

COLLEGE OF LETTERS AND SCIENCE UNIVERSITY OF CALIFORNIA LOS ANGELES

Students who were ineligible for admission to UCLA College of Letters and Science directly from high school may become eligible by completing 56 UC transfer units with a 2.4 grade point average at Pierce and satisfying either 1) high school A-F course deficiencies with two requirements waived; (except the English and Mathematics requirements) with grades of "C" or better OR 2) completing English 101, one math course which has a prerequisite of Mathematics 125 and one United States history, foreign language, or lab science course with grades of "C" or better. *Consult with a counselor about clearing this requirement.* A maximum of 70 units from Pierce will be accepted towards graduation from UCLA. Students are advised that the above are minimum requirements, and that entering students often have a much higher grade point average.

To obtain an Associate Degree from Pierce College as well as prepare for transfer to UCLA, see Graduation Requirements listed in previous section.

A. General University of California Requirements

American—History—and—Institutions: Any course used to meet this requirement may also apply on the general college requirements listed below. This requirement may be met in one of the two following ways:

1. Completion of two semesters in high school of American History or American Government or a combination, with a "B"average.
2. Completion of one course chosen from the following with a grade of "C" or better: Economics 10, English 207, 208; History 5, 6, 8, 11*, 12*, 13*, 14, 15, 20, 41*, 42*; Political Science 1*.
   **These courses also meet the government requirement for the Pierce AA degree.*

B. General Education Requirements

Students are encouraged to complete the IGETC.

BASIC PROFICIENCY LEVELS

ENGLISH COMPOSITION: English 101 or 102 with a grade of at least "C", or AP score of 4 or 5.

QUANTITATIVE REASONING: One course from: Computer Science 506, 513; Mathematics 227, 235, 236, 255, 261, 262, 263, 270, 275; Statistics 1; Philosophy 9 with a grade of "C" or better or Mathematics SAT score of 600 or a CEEB Mathematics score of 550. CR/NC unacceptable.

FOREIGN LANGUAGE: Prior to Fall 1989, through course 2 or above in any language; Fall 1989 and after, Language 3 or ETS (AP) score of 3 or above in French, German, or Spanish. Repetition of high school foreign language coursework will count toward the 56 units for admission to UCLA and toward the Bachelor's Degree.

GENERAL EDUCATION REQUIREMENTS

A minimum of 32 semester units must be completed. *Courses from the major department are not applicable.* Required major preparatory courses from departments other than the major may be applied. To find which grouping contains your major please check the section that follows.

PHYSICAL SCIENCES: *Three courses or eight semester units* (for Physical Science majors, only one course is required). Students are *required* to include a lab course and have at least five units in one discipline. Astronomy 1 or 3; Chemistry 51, 101, 102, or 60; Environmental Science 9 or Physical Science 5; Geography 1; Geology 1, 2, 6, 7; Mathematics 236, 255, 261-263, 270, 275; Meteorology 3 or Geography 3; Oceanography 1, 10; Physics 37, 38, 39 (or 1-4), 6, 7, 11, 12.

LIFE SCIENCES: *Three courses or eight semester units* (for Life Science majors, only one course is required). Students are required to include a lab course. Anatomy 1; Anthropology 101; Biology 3 or 25, 6, 7, 10, 11; Environmental Science 18 or Geography 9; Microbiology 1 or 20; Oceanography 12; Physiology 1, 6; Psychology 2.

SOCIAL SCIENCES: Four courses: Two from Historical Analysis and two from Social Analysis.

Historical Analysis (Historical Analysis majors are not required to satisfy this area.) History 1-7, 11 or 41, 12 or 42, 13.

Social Analysis (Social Analysis majors are not required to satisfy this area.) Anthropology 102, 103, 112; Economics 1, 2, 10 or History 15; Geography 2; Political Science 1, 2, 7, 30; Psychology 1; Sociology 1.

HUMANITIES: Four courses: One from Literature. No more than two from any other subgroup. (Humanities majors are required to take only one course in addition to a literature course, for a total of 2 courses.)

Literature: English 203-208, 211, 212, 215, 216; Theater 125 or English 213.

Philosophy: Philosophy 2-4, 20, 22, 24, 25.

Language & Linguistics: One semester foreign language course 4 or above; Anthropology 104.

Culture & Civilization: Anthropology 123; English 250; Humanities 6, 11-14, 30, 31.

Arts: Art 101, 102, 111; Cinema 3; Music 111, 112, 121, 122; Theater 110, 115.

GENERAL EDUCATION GROUPINGS BY MAJOR

(A) HUMANITIES

A1: Literature

African Languages
Arabic
Chinese
Classics
English
English/Greek
English/Latin
French
German
Greek
Hebrew
Italian (including Italian and Special Fields)
Japanese
Latin
Portuguese
Russian Language and Literature
Scandinavian Languages
Slavic Languages and Literatures
Spanish
Spanish and Portuguese

A2: Philosophy

Philosophy

A3: Language and Linguistics

French and Linguistics
Linguistics (including all Linguistics and Special Fields majors)
Spanish and Linguistics

A4: Culture and Civilization

Ancient Near Eastern Civilizations
Classical Civilization
Iranian Studies
Jewish Studies
Near Eastern Studies
Religion, Study of
Russian Studies

A5: The Arts

Art History
World Arts and Cultures

(B) PHYSICAL SCIENCES

Applied Mathematics
Astronomy
Astrophysics
Atmospheric Sciences
Biochemistry
Chemistry
Chemistry/Materials Science
Cybernetics
Economics/System Science
General Chemistry
General Mathematics
General Physics
Geology (including all specialization options)
Geochemistry
Geophysics (including all specialization options)
Mathematics
Mathematics/Applied Science
Mathematics of Computation
Physics

(C) SOCIAL SCIENCES

C1: Historical Analysis

History
History/Art History

C2: Social Analysis

Afro-American Studies
Anthropology
Chicano Studies
Communication Studies
Development Studies
East Asian Studies
Economics (including all specialization options except Economics/System Science)
Geography
Geography/Ecosystems
Latin American Studies
Political Science
Sociology
Women's Studies

(D) LIFE SCIENCES

Biology
Cognitive Science
Kinesiology
Microbiology
Psychobiology
Psychology

Requirements for College of Letters and Science Majors

Requirements for the majors are available upon request in the Counseling Office.

SCHOOL OF ENGINEERING AND APPLIED SCIENCE CRITERIA FOR ADMISSION

Completion of at least 9 of the 11 required courses listed below in Chemistry, Physics and Mathematics. Chemistry 101 and 102 are not required for the Computer Engineering option.

Chemistry 101 & 102
Mathematics 261-263, 270 & 275
Physics 37-39
And completion of English 101.

The School of Engineering and Applied Science offers a Bachelor of Science degree in the following areas: Aerospace Engineering, Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, Engineering, Materials Engineering, and Mechanical Engineering. Students are advised to check with a counselor regarding specific requirements pertinent to their major choice and the general education requirements peculiar to engineering.

SCHOOL OF THE ARTS SCHOOL OF THEATER, FILM AND TELEVISION UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Majors: Art, Dance, Design, Film and Television, Music, Theater, and World Arts and Cultures, Ethnomusicology

It is highly recommended that students should follow the IGETC Transfer plan. Please see a counselor for preparation for the major.

The College accepts new students for most majors for the Fall Quarter only. Applications for admission must be made in November of the preceding year. Admission is very selective. It is highly recommended that the student consult with a counselor as early as possible.

COURSE DESCRIPTIONS

With the exception of courses designated NDA, all Los Angeles Pierce College courses are college level courses and may be applied toward graduation requirements for the Associate Degree.

The credit value in semester units of each course is indicated by the number in parentheses following the course title. Each unit represents one hour per week of lecture or recitation; more time is required in laboratory or field work not requiring outside preparation.

The following code letters will be found after the units.

UC – This course is acceptable for credit at all branches of the University of California.

†UC– Students are cautioned that transferability credit for field work or directed study to a UC is not automatically granted. Transfer credit is contingent, after a review of the course outline, upon the approval of UC campus.
A UC student must submit a petition to initiate the process.
For further clarification, please consult a counselor.

CSU – Refers to transferability to the California State Universities and Colleges.

RPT – Indicates a course may be repeated for credit. The number which follows the symbol RPT indicates the number of times the course may be repeated for credit.

NDA – Non Degree Applicable. Some courses which are offered for college credit, but which cannot be applied toward graduation requirements for the Associate Degree, are designated by the code NDA. All courses which meet the major requirements of the educational programs listed in the catalog may be applied towards graduation requirements for the Associate Degree. All transfer courses may be applied to the Associate Degree.

CAN – The California Articulation Number System identifies some of the transferable, lower division, introductory (preparatory) courses taught on California college campuses. The system assures students that CAN courses on one participating campus will be accepted "in lieu of" the comparable CAN courses on another participating campus.

A letter (e.g. A, B, C, Y, Z) following a course number indicates that the course has been modularized. This means that the course has been divided into self-contained divisions and is offered for fewer units than stated, with a corresponding reduction in the number of hours per week that the class meets.

The prerequisites for courses are subject to change. Check the schedule of classes for the current prerequisites.

ACCOUNTING

1 Introductory Accounting I (5) UC:CSU (CAN BUS 2)

Recommended prerequisite: Business 38
Lecture 5 hours.
Introduces the fundamental principles and concepts of accounting as a basis for financial communication in business. Includes the study of the procedures in maintaining records of business transactions and the preparation of financial statements for the sole proprietorship service or merchandising firm. Topics in cash, receivables and temporary investments, inventories, plant assets and intangible assets, payroll, notes payable and other current liabilities, concepts and principles.

2 Introductory Accounting II (5) UC:CSU (CAN BUS 4)

Prerequisite: Accounting 1 with a grade of "C" or better, or the equivalent.
Lecture 5 hours.
Continues the introductory phase of accounting. Topics in partnership formation, income division and liquidation, corporate organization and equity rights, earnings, dividends, long-term liabilities, investments in stocks and bonds, consolidated statements, international operations, statement of cash flows, financial statement analysis, annual reports, managerial accounting principles, cost systems, cost behavior, budgeting, cost-volume-profit analysis, accounting for decentralized operations, transfer pricing, differential analysis, product pricing, and capital investment analysis.

15 Tax Accounting I (3) CSU

Prerequisite: Accounting 1 with a grade of "C" or better.
Lecture 3 hours.
Deals with tax laws, accounting procedures, and preparation of individual Federal and California income tax returns.

17 Payroll Accounting (2)

Prerequisite: Accounting 1 with a grade of "C" or better.
Lecture/Lab 2 hours.
Concerns methods and procedures in accounting for payrolls and in the preparation of Federal and State payroll tax returns using up-to-date Computer Software Packages. Techniques surveyed vary from the manual to current automated payroll procedures. Also acquaints students with the various phases of the Social Security benefits and taxes and State and Federal laws relating to the payment of wages and salaries.

20 Managerial Accounting (3) CSU

Prerequisite: Accounting 1 with a grade of "C" or better.
Lecture 3 hours.
Covers the preparation and analysis of accounting reports and statements for the purposes of aiding management in the decision-making processes, in planning and in financial control. Emphasis is on the utilization of accounting data by business management. Includes budgeting, analysis for business finance, cost accounting analysis, source and application of funds statement, statement analysis and direct costing techniques.

21 Bookkeeping and Accounting I (3) *UC:CSU

Note: Accounting 21 and 22 are equal to Accounting 1. Credit cannot be given for Accounting 21 or 22 and Accounting 1.
Lecture 3 hours.
Reviews the fundamentals of bookkeeping and accounting, the accounting cycle, the journals and ledgers, the work-sheet and financial statements, and the year-end adjustments and closing entries. Problems and a practice set are integral parts of this course.

22 Bookkeeping and Accounting II (3) *UC:CSU

Note: Accounting 21 and 22 are equal to Accounting 1. Credit cannot be given for Accounting 21 or 22 and Accounting 1.
Prerequisite: Accounting 21.
Lecture 3 hours.
The voucher system; payroll accounting; accounting for notes, drafts, bad debts, inventories, cost of goods sold, fixed assets, depreciation, adjustments, and interim statements. Students complete a practice set.

Cooperative Education — Work Experience

See Business - Cooperative Education.

**UC Credit Limit: Maximum 5 units.*

ACCOUNTING - COMPUTERIZED

(See course listings under Office Administration.)

AGRICULTURE

General Agriculture — Agriculture 100-199
Animal Health Technology — Agriculture 400-499
Animal Science Agriculture 500-590
Horse Science — Agriculture 600-699
Horticulture — Agriculture 700-899
Natural Resources Management — Agriculture 900-999

103 Introduction to Soils (3) UC:CSU

Lecture 2 hours; laboratory 2 hours.
Considers the origin, formation, structure, and composition of soils. Includes the effects of tillage, drainage, and irrigation upon soil productivity. Examines the effect of laboratory and field work dealing with the maintenance and improvement of soil fertility upon various crops and farm systems. Analyzes the effect of organic and inorganic fertilizers upon soil productivity, control of soil moisture, and the problems of alkali and dry land management.

Normally offered in the Fall semester only.

112 Fertilizers and Plant Nutrition (3) CSU

Lecture 2 hours; laboratory 2 hours.
Studies the formation of soils with their physical and biological properties. Gives practical applications in effectively using soil as the foundation of plant growth and in improving soils by physical soil amendments.

181 Field Work (10)

Laboratory 30 hours.
Supervised job experience extending occupational learning in the classroom at an on-the-job learning station related to the students' occupational goals.

309 Surveying for Agriculture and Natural Resource Management (3) CSU

Lecture 1 hour; laboratory 4 hours.
Presents principles, field practices, calculations, linear measurements, theory and adjustments of level and transits, field operations with level and transit, traverse computation, elevations and angles, plane table mapping, and earth yardage for land farming.

401 Orientation to Veterinary Science (1)

Lecture 1 hour.
Directs student exploration of Animal Health Technology and Veterinary Medicine as a career choice. Includes job tasks, job market possibilities, preview of current legislation and medical terminology.

402 Topics in Veterinary Technology (2)

Prerequisite: Approval to enter the Animal Health Technology Program.
Lecture 2 hours.
Orients students into the Animal Health Technology Program. Includes medical terminology, veterinary ethics and discussion of the role of the technician in veterinary medicine.

Normally offered in the Fall semester only.

410 Animal Nursing I (2)

Prerequisite: Approval to enter Animal Health Technology Program.
Lecture 2 hours.
Studies the symptoms and treatments of diseases affecting small animals, vaccination protocol, pharmacology, first aid procedures, and veterinary dentistry.

411 Animal Nursing I Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 410.
Laboratory 2 hours.
Provides for practical experience in performing specific skills involved with animal nursing.

412 Animal Nursing II (2)

Prerequisite: Agriculture 410.
Lecture 2 hours.
Studies emergency procedures, care of critically ill patients, and an introductory study of birds and reptiles.

413 Animal Nursing II Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 412.
Laboratory 2 hours.
Continues Animal Nursing I Laboratory in providing practical experience in performing new technical skills involved in animal nursing.

420 Clinical Procedures in Animal Care I (2)

Prerequisite: Approval to enter the Animal Health Technology Program.
Lecture 2 hours.
Prepares the student to perform common clinical procedures in the animal hospital or laboratory under the supervision of a veterinarian.

421 Clinical Procedures in Animal Care I Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 420.
Laboratory 2 hours.
Provides for practical experience in various clinical procedures needed by the animal health technician.

422 Clinical Procedures in Animal Care II (2)

Prerequisite: Agriculture 420 and 421.
Lecture 2 hours.
Prepares the student to perform additional clinical procedures with emphasis on surgery and anesthetics.

423 Clinical Procedures in Animal Care II Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 422.
Laboratory 2 hours.
Provides for practical experience in anesthesiology, surgical assistance and other aspects of clinical procedures.

430 Veterinary Clinical Pathology (2)

Prerequisite: Approval to enter Animal Health Technology program.
Lecture 2 hours.
Provides a comprehensive introduction to modern practical methods in veterinary clinical laboratory analysis. Includes blood, urine, feces and skin scrapings tests with emphasis on small animal species.

431 Veterinary Clinical Pathology Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 430.
Laboratory 2 hours.
Provides practical experience in performing various clinical analysis examinations and procedures.

435 Veterinary Radiography (2)

Prerequisite: Approval to enter the Animal Health Technology program.
Lecture 2 hours.
Considers radiological terms, safety, and techniques needed by the animal health technician to assist the veterinarian.

436 Veterinary Radiography Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 435.
Laboratory 2 hours.
Provides practice in radiological techniques and film developing as well as safe use of equipment.

441 Large Animal Nursing Laboratory (2) RPT 1

Prerequisite: Approval to enter Animal Health Technology program.
Laboratory 4 hours.
Provides hands-on practical experience in performing procedures and husbandry practices common to large and laboratory animal species. Extensive practice in handling and restraint also provided.

450 Introduction to Animal Facilitated Therapy (1)

Prerequisite: None
Lecture 2 hours, field trips or labs to be announced.
The role of animals, including both large and small animal species, in animal-assisted therapy. Issues such as selection, training, care and maintenance, facilities and personnel required, as well as costs and liability issues will be discussed. The class will emphasize practical issues and hands-on experience.

460 First Aid for Dogs and Cats (2)

Prerequisite: None
Lecture 1 hour.
Presents an overview of first aid situations and their treatments in dogs and cats, relative to animal facility employees and/or pet owners.

461 Companion Animal Management (2)

Prerequisite: None
Lecture 2 hours.
Provides a fundamental understanding of the basic physical and psychological requirements of companion animals. Topics include housing, nutrition, restraint, behavior and development.

466 Avian Care and Husbandry (1)

Prerequisite: None
Lecture 1 hour.
This course provides the students with information and practical training about pet birds. Topics include basic management principles such as housing and diet, common avian ailments, breeding techniques and behavior. Included will be aspects of aviary set-up and management.

480 Clinical Experience for Animal Technicians (3) RPT 2

Prerequisite: Completion of Agriculture 420 and/or Agriculture 422 with a grade of "C" or better.
Laboratory 9 hours.
Provides an opportunity to obtain specialized experience in a veterinary clinic through an internship program. During this internship program, students will be given varied practical experience in all aspects of veterinary assistance and will be able to coordinate this experience with their classroom instruction.

Offered every semester.

489 Animal Health Technician Practicums (12)

Prerequisite: Be a professional animal health technician.
Lecture 12 hours.
Designed primarily for practicing animal health technicians. Discusses selected topics of current interest. Taught in modules of one or two units.

501 Principles of Animal Science (3) UC:CSU

Lecture 3 hours.
Provides a broad perspective of livestock management problems and decisions that must be made in livestock production. Covers the following class of livestock: beef cattle, dairy cattle, sheep, swine, horses and poultry. Topics include breeds, feeding, and reproduction as well as other management activities.

Offered every semester.

505 Animal Nutrition (3) CSU

Lecture 3 hours.
Includes a general study of the constituents of feed (carbohydrates, proteins, fats, minerals, vitamins and water), their utilization by the animal body, the digestive system, the processes of digestion and assimilation of the various feed constituents. Course includes ration balancing and feed identification.

Offered every semester.

506 Urban Farm Animal Health and Nursing Techniques (2)

Lecture 1 hour; laboratory 2 hours.
Provides practical aspects of urban animal health and related care of farm livestock. Course encompasses the various preventative health programs, as well as nursing techniques for backyard producers. Provides "hands-on" experience in performing husbandry practices common to each species.

510 Animal Health and Disease Control (3) CSU

Lecture 3 hours.
Relates the physiology of animals to animal health. Includes common animal diseases, their causes, prevention and control, the treatment of wounds and the relation of sanitation to disease prevention.

Offered every semester.

511 Anatomy and Physiology of Animals (3) CSU

Lecture 3 hours.
Provides a basic study of the facts and principles of animal life. Includes detailed reference to the anatomy and physiology of domestic animals. Comparative anatomy and physiology is included.

Offered every semester.

512 Anatomy and Physiology of Animals Laboratory (1) CSU

Prerequisite: Concurrent enrollment or completion of Agriculture 511.
Laboratory 3 hours.
Provides practical experience discovering principles and structures associated with the anatomy and physiology of animals. Microscope work and dissection of the cat are included.

596 Agricultural Enterprise Projects (10)

Prerequisite: A production class and Agriculture 540.
Laboratory 30 hours.
Involves the planning, development and completion of an individual or group animal science or crop production project under the guidance of a faculty advisor on the College farm. Usually the project will involve purchase of animals or crops, associated production costs, and eventual profit at time of sale.

601 Horse Production (3) UC:CSU

Lecture 3 hours.
Examines the history of the horse, including anatomy, conformation, predisposing factors to unsoundness, selecting, housing, and use.

Offered every Fall semester.

602 Horse Husbandry (3) CSU

Prerequisite: Agriculture 601.
Lecture 3 hours.
Presents in advanced and detailed form breeding, mare and stallion selection, foaling of the mare, feeding and management of light horses, diseases, sanitation, and prevention of disease.

Offered every Spring semester.

603 Equine Management Techniques (10)

Prerequisite: Agriculture 601.
Lecture 5 hours; laboratory 10 hours.
Practical application of the management aspects of the horse industry, including participation in the management decisions associated with the College herd and facilities.

611 Farrier Science (2)

Prerequisite: Agriculture 601 and 602.
Lecture 1 hour; laboratory 2 hours.
Anatomy, physiology, and conformation of the horse's feet and legs. Basic principles of conformation and gait analysis in relation to hoof balance. Fundamentals of trimming, fitting and applying shoes.

615 Introduction to Rodeo (1)

Lecture 1 hour.
Familiarizes the student with the fundamentals of the sport of rodeo and changes occurring in the sport. Surveys the opportunities for a professional career.

616 Horse Show Activities (2) CSU RPT 3

Lecture 1 hour; laboratory 2 hours.
Introduces and familiarizes students with the development of show horses. Organization and management of horse shows. Skills required for a professional career in the field of performance horses.

617 Intercollegiate Rodeo Activities (2) CSU RPT 3

Activity: 10 hours.
Trains students for competition intercollegiate rodeo. Provides intensive practice in the various intercollegiate rodeo events. Familiarizes the student with fundamental rodeo arena procedures. Develops the physical dexterity and coordination necessary for participation in the sport of rodeo at college level. Students from this course will be selected to represent Los Angeles Pierce College at intercollegiate competitions.

Offered every semester.

620 Basic Equitation (1) CSU

Prerequisite: Concurrent enrollment in Agriculture 621.
Lecture 1 hour.
Provides instruction for those interested in training to ride and handle horses. Includes grooming, saddling, bridling, parts and care of the equipment of horses, and riding techniques.

Offered every semester.

621 Horseback Riding Laboratory (1) CSU RPT 3

Prerequisite: Agriculture 620 or concurrent enrollment in Agriculture 620.
Laboratory 2 hours.
Fundamental class in western and English riding designed to teach horseback riding to students with varying degrees of experience.

Beginning, intermediate, and advanced levels offered, but not necessarily every semester.

630 Beginning Equine Training (2)

Prerequisite: Agriculture 601 and 602.
Lecture 1 hour; laboratory 2 hours.
Beginning equine training in the schooling and training of young horses for riding. Emphasis will be placed on controlling and conditioning the young horse in a manner safe for the student and the horse.

631 Advanced Equine Training (2)

Prerequisite: Agriculture 630, horse and trailer.
Lecture 1 hour; laboratory 2 hours.
Expands the concepts learned in Agriculture 630. Emphasis will be placed on horse and rider as a team.

640 Horseshow Organization and Management (2)

Prerequisite: Agriculture 601.
Lecture 1 hour; laboratory 2 hours.
A comprehensive study of horseshow organization and management, with particular emphasis on accounting, insurance, labor management, marketing and advertising. Emphasizes adequate planning and preparation for success.

650 Equine Health and First Aid (2)

Prerequisite: Agriculture 601.
Lecture 1 hour; laboratory 2 hours.
Creates an awareness among horse owners, trainers, and stable managers of a healthy or sick animal; studies the cause and control measures which may be practiced. Helps the horse owner and the veterinary scientist communicate.

701 Retail Floral Design and Practices I (2) CSU

Lecture 1 hour; laboratory 2 hours.
Teaches students the flowers and plants in Southern California used primarily in the florist trade. Includes the use and care of equipment used in the trade and shop practice in flower care and corsage making.

Offered every semester.

702 Retail Floral Design and Practices II (2) CSU

Prerequisite: Agriculture 701.
Lecture 1 hour; laboratory 2 hours.
Continues Agriculture 701. As laboratory work, includes bowl arrangements for home and hospital, baby novelty arrangements, and anniversary arrangements. Studies foliage and flowering plant trimming, green planters, and the use of plastic flowers.

Offered every semester.

703 Retail Floral Design and Practices III (2) CSU

Prerequisite: Agriculture 702.
Lecture 1 hour; laboratory 2 hours.
Continues Agriculture 702. Studies floral designing of memorial offerings, floral sprays, set pieces such as wreaths, hearts, crosses, and blankets. Includes a study of general shop techniques. As part of the course requirements, requires students to spend some time in local floral shops.

Offered every semester.

704 Advanced Retail Floral Design and Practices (2)

Prerequisite: Agriculture 703.
Lecture 1 hour; laboratory 2 hours.
Presents advanced demonstration in floral arrangements for special occasions, including complete coverage of wedding bouquets and corsages, church decorations, ballroom and banquet decor.

Offered every semester.

708 Floristry Projects (6)

Prerequisite: A horticulture production course covering the field in which the project is undertaken, concurrent enrollment in such a production course.
Laboratory 12 hours.
Involves planning, developing, and completing an individual floricultural production project under the guidance of a faculty advisor, on or off the college campus.

Offered every semester.

711 Botany for Horticulture (4) UC:CSU

Lecture 3 hours; laboratory 3 hours.
Considers the fundamentals of botany, including a study of the main external parts and functions of flowering plants, the basic plant cell, composition and functions, and various specialized tissues and their functions. Discusses plant reproduction, both sexual and asexual, including the basics of plant breeding and selection of new varieties for landscape horticulture. Emphasizes recognition, proper utilization, and maintenance of ornamental plants.

712 Botany of Ornamental Plants (3)

Lecture 2 hours; laboratory 2 hours.
Emphasizes recognition, utilization and maintenance of ornamental plants. Consideration of the basic botany of plants and a comprehensive study of the morphology and anatomy of ornamental plants. Discusses growth patterns, environmental relationships and plant relationships and plant reactions to the environment.

713 Plants and Civilization (1)

Lecture 1 hour.
Emphasizes the origin of agriculture. Discusses various traditional botany crops and commercial uses of plants. Views agriculture of the future with an emphasis on agriculture continuing to meet the needs of world food production.

714 Principles of Horticulture (3) CSU

Lecture 3 hours.
Concerns the maintenance work commonly done in home and estate gardens as well as parks and other public areas. Gives attention to lawn care, techniques of watering, fertilization and weed control.

Offered every Spring and Fall semesters, even years.

715 Therapeutic Horticulture (1)

Lecture 1 hour.
Provides instruction to persons teaching horticulture to the handicapped. Discusses planning, facilities design, equipment and supplies and projects necessary. Covers instruction methods and selection of plant materials for use in instruction and for patient projects.

716 Arboriculture I (Care of Trees and Shrubs) (1)

Lecture 1 hour.
Basic methods of tree and shrub care. Selection, planting and maintenance of trees and shrubs from youth to specimen maturity. Emphasizes cultural aspects as well as selection criteria. Extensive instruction in pruning and shaping.

717 Arboriculture II (Tree Surgery) (1)

Lecture 1 hour.
Introduces tree surgery including care and maintenance of diseased trees. Diagnosing problems, treatment and surgical practices are included. Discusses micro-injection, tree inventory and tree appraisal. Emphasizes care of trees as part of the urban forest.

718 General Fruit Production I (3) UC:CSU

Lecture 2 hours; laboratory 2 hours.
Surveys subtropical fruit with emphasis on citrus. Analyzes soil and climatic requirements, frost protection methods, use of root stocks, new varieties, bud section, and tree records. Considers citrus pests, including spraying, fumigating, dusting and orchard examination. Includes marketing and fruit handling problems, with trips to local packing houses.

719 General Fruit Production II (3) CSU

Lecture 2 hours; laboratory 2 hours.
Deals with the selection of orchard sites, laying out of a grove and choosing of good stock; pest control, soil management and environmental effects pruning, grafting and budding. Includes the almond, apple, apricot, avocado, bush berry, citrus, fig, grape, olive, peach, nectarine, pear, persimmon, plum, prune, strawberry, and walnut.

720 Tropical Fruits and Nuts (1)

Lecture 1 hour.
Introduces tropical horticulture. Discusses major crops such as coffee, tea, bananas, cocoa and other crops. Deals with cultural aspects, harvesting and processing of tropical crops and economic importance in world and U. S. agriculture.

721 Organic Gardening (1)

Lecture 1 hour.
Introduces natural methods of food production. Different organic gardening methods; discussion of organic types of fertilizers, composting and pest control methods; sources of natural gardening supplies and natural food cooperatives are covered.

722 Care of Horticulture Equipment I (1)

Lecture 1 hour.
Studies the selection, storage, maintenance, and care of horticultural tools and equipment with emphasis on hand operated types. Includes sources of equipment, adjustment, service, sharpening, and repair.

723 Care of Horticulture Equipment II (1)

Prerequisite: Agriculture 722.
Lecture 1 hour.
Studies the selection, storage, maintenance and care of horticultural tools and equipment with emphasis on mechanized types (i. e. lawn mowers, chain saws, rototillers). Includes sources of equipment, adjustment, service, sharpening, repair and overhaul.

724 Drip Irrigation Techniques (1) CSU

Lecture 1 hour.
Studies the design, installation and maintenance of drip irrigation systems with emphasis on both theory and practical application to ornamental horticulture and food crop production.

725 Vegetable Production (1) CSU

Lecture 1 hour.
Discusses production of garden vegetables, preparation of the seed bed, planting, watering and fertilization. Pest control methods, selection of varieties and gardening equipment and tools are topics of instruction.

726 Agricultural Genetics (1) CSU

Lecture 1 hour.
Introduces the basics of plant and animal genetics. Discusses formations of hybrids and clones, gene interactions and utilizations of mutations. Prepares students for plant breeding and animal production.

727 Plant Breeding Techniques (1) CSU

Prerequisite: Agriculture 711 or 726.
Lecture 1 hour.
Application of principles of plant improvement through selection, hybridization and utilization of hybrid vigor. Demonstrates breeding techniques necessary to hybridize plants.

728 Apiculture (Bee-Keeping) (1)

Lecture 1 hour.
Care and management of bees. Discusses principles of effective establishment and maintenance of apiaries. Pollination and value of bees to agriculture. Recognition and control of bee diseases. Laws and regulations pertaining to beekeeping.

729 Viticulture Practices (3) UC:CSU

Lecture 2 hours; laboratory 2 hours.
A comprehensive study of grape growing utilizing the College plantings for field practice in planting, training and maintaining the vineyard. Varietal identification and use. Commercial production practices, mechanization and processing are covered.

730 Introduction to Enology (1) CSU

Lecture 1 hour.
History of wine and the wine production regions of the world. Emphasis on grapes and wine in California's historic Los Angeles area. Considers wine production and techniques. Theoretical aspects only. Wine not tasted or made.

731 Agricultural Measurement Techniques (1) CSU

Lecture 1 hour.
Provides instruction on methods of measuring and evaluating horticultural plantings, applications and treatments. Deals with experimental design, interpretation of results and application to horticultural and business practices.

732 Urban Farming Techniques (1) CSU

Lecture 1 hour.
Basic horticulture practices for the urban farmer. Discusses growth habits, reactions and patterns of plants. Discusses gardening in limited spaces both indoors and outdoors. Provides guidance necessary for home production of ornamental plants for both apartment dwellers and homeowners.

742 Practicum in Horticulture (5) CSU

Lecture 5 hours.
Designed to present specific subjects to meet the needs of the horticulture industry and the community-at-large. Also meets the requirement for continuing education for various horticulture industries as dictated by the Agriculture Code of California.
(See schedule of classes for specific topics.)

756 Greenhouse Plant Production (3) CSU

Lecture 2 hours; laboratory 3 hours.
Studies the status of the flower and pot plant growing industry. Considers all types of forcing structures, including their parts, maintenance, and use. For both greenhouse and field situations, studies soil and container mixes, nutrition, light, temperature, moisture, and pest and disease problems. Identifies flowering and foliage plants in common usage, which are grown in laboratory practice. Includes field trips for observation of industry facilities, methods, and problems.

757 Plant Propagation (3) CSU

Lecture 2 hours; laboratory 3 hours.
Provides practice in plant propagation for commercial or home use. Requires students to propagate plant materials during laboratory hours. Discusses propagation methods, structures, diseases, and insect prevention and control of the plants being propagated. Provides laboratory work which includes seeding, transplanting, cutting, budding and grafting, potting and canning.

758 Nursery Practices and Management (3) CSU

Lecture 2 hours; laboratory 2 hours.
Meets the needs of students planning to enter the nursery industry or the fields of landscaping and maintenance. Includes the study of wholesale and retail nursery operations and their relationships to the homeowner and the professional landscape operator. Consists of the actual practices in running the school nursery. Includes field trips to observe commercial nurseries in operation.

759 Techniques of Greenhouse Management (3) CSU

Prerequisite: Agriculture 756.
Lecture 2 hours; laboratory 2 hours.
Management of facilities, cultural operation, crop rotation, scheduling and record keeping. Provides practical experience in greenhouse management.

760 Indoor Plant Care and Maintenance I (1)

Lecture 1 hour.
Watering, fertilization, staking, pruning and planting the house plant. Discusses soil, light and humidity relationships. Discusses how and where to purchase plants.

761 Indoor Plant Care and Maintenance II (1)

Prerequisite: Agriculture 760.
Lecture 1 hour.
A continuation of Agriculture 760. Discusses general plant care, pest control and troubleshooting plant problems. Instruction of the plant maintenance business to include all aspects of customer relations and plant maintenance technician operations.

762 Interior Plantscaping (1)

Lecture 1 hour.
Economic and managerial aspects of plantscaping. Introduces technical aspects of interior design and planting. Emphasis on foliage plant selection and installation and client relationships.

764 Hydroponic Techniques (1)

Lecture 1 hour.
Production of vegetables and other plants hydroponically. Discusses all aspects of hydroponic growing, including soil, fertilizers, nutrient testing, suitable plants and climatic control. Deals with various hydroponic systems and methods.

765 Greenhouse/Nursery Marketing and Sales Techniques (1)

Lecture 1 hour.
Marketing and selling plant products. Discusses aspects of wholesaling and retailing to include pricing, quality, advertising, and displays. Discusses general operations, associations and local personnel practices.

766 Garden Center Management (1)

Lecture 1 hour.
Managerial aspects of a garden center operation. Covers the particulars of establishing, designing and maintaining a garden center. Emphasizes practical functioning of such a center.

800 Plant Identification and Use I (3) UC:CSU

Recommendeded: Agriculture 711 or Botany 1 completed.
Lecture 2 hours; laboratory 2 hours.
Presents a general course in plant identification, including woody and non-woody kinds. Emphasizes ornamental trees, shrubs, and vines, with some attention to annuals, perennials, flowers, succulents, and grasses. Is planned chiefly for students entering the fields of nursery practices, landscaping, and maintenance.

801 Plant Identification and Use II (3) CSU

Lecture 2 hours; laboratory 2 hours.
Continues Agriculture 800, considering plants used in landscaping and nursery occupations not included in Agriculture 800. Requires a number of field trips for observation of plants and their uses.

802 Plant Identification and Use III (3) CSU

Lecture 2 hours; laboratory 2 hours.
Includes the basic botany, habits, habitats, and culture of ornamental and fruit trees. Emphasizes identification, selection, training, correct placement, planting, and all-around care of trees. Considers problems of pruning, fertilization, pests and diseases and their treatment. Uses demonstrations and field trips largely within the school facilities.

803 Native Plants for the Landscape (3) CSU

Lecture 2 hours; laboratory 2 hours.
Teaches California native plant materials suitable for landscape use. Includes some drought tolerant species as well. Emphasizes recognition, selection for specific uses, cultural requirements, and ecology.

804 Landscape Drafting and Graphics (1)

Lecture 1 hour.
Basic landscape drafting practices, lettering, line work, symbols, sheet composition and dimensioning. Provides brief introduction to landscape design.

805 Basic Planting Design (1)

Prerequisite: Agriculture 800 and 801 and 804.
Lecture 1 hour.
Design and preparation of landscape planting plans. Emphasizes ecological and aesthetic considerations.

806 Landscape Planning and Design (4) *UC:CSU

Lecture 2 hours; laboratory 4 hours.
Includes the fundamental principles of landscape design, drafting, mapping techniques, basic design concepts as applied to residential and commercial developments, and practice in preparing landscape plans for small properties. Students must provide their own drawing equipment.

807 Advanced Landscape Planning and Design (4) *UC:CSU RPT 3

Prerequisite: Agriculture 806.
Lecture 2 hours; laboratory 4 hours.
Continues Agriculture 806 with special emphasis on planting design oriented to commercial aspects, grading plans, construction drawings, specifications, cost estimates, and client relationships. Affords practice in solution of more difficult problems.

808 Residential Landscape Design (3) CSU

Lecture 3 hours.
Concentrates on home landscaping and the identification and selection of plant materials suitable for the average small house. Considers tree placement, lawn and ground covers, floral and shrub borders, foundation planting, the outdoor living space, play areas, and service yards. Requires students to complete a landscape plan of their choosing.

809 Planting for Garden Color (1)

Prerequisite: Agriculture 804.
Lecture 1 hour.
Design, selection and plant installation methods for color in the garden. Includes use of trees, shrubs, ground covers, with emphasis on use of annuals and perennials.

810 Contained Planting Design (1)

Lecture 1 hour.
Fundamentals of container gardening including selection of containers, construction of containers, and selection of appropriate plant materials.

811 Landscape Construction Design (1)

Prerequisite: Agriculture 804.
Lecture 1 hour.
Design of basic garden elements (i. e. walls, overheads, pools, steps, fences, decks, and paving). Reviews construction materials and their inherent qualities. Preparation of construction drawings.

812 Landscape Installation and Maintenance I (3) CSU RPT 1

Lecture 2 hours; laboratory 2 hours.
Teaches how to install the landscape work commonly done at commercial and residential job sites. Includes sod installation; soil preparation; turf renovation, tree moving equipment; pruning and surgery; injection feeding; lawn header board construction; vertical mulching techniques; planting of shrubs, trees, flowers, and ground covers. Covers use and care of operative equipment used by landscaping and maintenance crews, rototillers, edgers, mowers, sod cutters, chainsaws, and use of instruments (transit, builders level, etc.).

813 Landscape Installation and Maintenance II (3) RPT 1

Prerequisite: Agriculture 812.
Lecture 2 hours; laboratory 2 hours.
A continuation of skills and practices in the installation and maintenance of landscape projects. Emphasis will be on maintenance and business aspects.

814 Landscape Maintenance Management (3)

Prerequisite: Agriculture 812.
Lecture 2 hours; laboratory 2 hours.
Organization of materials, equipment, and labor for the development of landscape maintenance projects. Emphasis given to records, bidding projects, and management procedures.

815 Blueprint Reading and Cost Estimating (2)

Lecture 1 hour; laboratory 2 hours
Interpretation of construction drawings and specifications for landscaping, to include quantity counts of material items and estimating costs of labor and materials.

816 Grading and Drainage Planning (1) CSU

Lecture 1 hour.
Proper grading and drainage methodology in the landscape construction industry. Emphasis will be given to industry standards and practices.

817 Landscape Contracting Practices (1) CSU

Lecture 1 hour.
Licensing requirements, testing procedures, and responsibilities of operating as a licensed landscape contractor.

818 Basic Construction Techniques (Landscape Construction) (3) CSU

Lecture 2 hours; laboratory 3 hours.
Includes fundamental concepts, materials and methods of working with earth, wood, concrete, concrete block, brick and stone, and irrigation and drainage as they apply to construction. Includes projects, blueprint reading, budget information, use of construction equipment and instruments as related to projects. Includes operation of power equipment. **NOTE: Due to the nature of the class, strenuous activity is necessary on occasion.**

819 Advanced Construction Techniques (3)

Prerequisite: Agriculture 818.
Lecture 2 hours; laboratory 3 hours.
Installation of landscape projects with a minimum of instruction and supervision. Emphasis on responsibility and decision making.

820 Irrigation Design and Installation (3) CSU

Lecture 2 hours; laboratory 2 hours.
Studies the importance of irrigation to plant growth as well as the various methods of irrigation with special emphasis on sprinklers and irrigation management procedures.

821 Advanced Irrigation Design (3) CSU RPT 2

Prerequisite: Agriculture 820.
Lecture 2 hours; laboratory 2 hours.
Design of large irrigation system, including multisystem operation, satellite programming, loop systems, pump systems, and installation procedures.

822 Turf and Ground Cover Management (3) CSU

Lecture 2 hours; laboratory 2 hours.
Studies turfgrasses, their characteristics, uses, and management. Covers soils, soil preparation, irrigation, fertilization, insects, weeds, disease, and special management factors. Requires field trips to supplement class work.

823 Advanced Turf and Ground Cover Management (3) CSU

Prerequisite: Agriculture 822.
Lecture 2 hours; laboratory 2 hours.
Includes study of the following topics: equipment used with turfgrass management; soil aerification and thatch control irrigation, including drainage requirements and the use of wetting agents; sprinkler system design, checking and repair; disease, insect and weed identification and control; landscape shrubs and tree maintenance; record keeping and budgeting; personnel management and public relations.

824 Turf Equipment Use and Maintenance (1)

Lecture 1 hour.
Types of equipment used to maintain commercial turf areas (i. e. golf courses, parks, condominiums). Emphasis is on selection, operation and maintenance.

825 Estate and Grounds Care (1)

Lecture 1 hour.
Techniques of planning and controlling estate and grounds maintenance and care programs. Discusses formal gardens, hedges, screens and special pruning. Equipment maintenance and scheduling, programming and report writing are discussed.

840 Introduction to Pest Management (3) CSU

Lecture 2 hours; laboratory 2 hours.
Covers the identification and control of insect pests common to agricultural crops inclusive of ornamentals, the identification and the knowledge and control of common rodents and their effect upon agricultural production. Requires identification collection of insects by each student, and field work to supplement class and laboratory work.

841 Insect Pest Control (3)

Prerequisite: Agriculture 840.
Lecture 2 hours; laboratory 2 hours.
Presents detailed study of economically important insect pests destructive to plant life in Southern California. Carefully reviews life histories of pests, oriented to efficient control techniques, especially on a commercial level. Discusses the latest information on insecticides and practical field problems. Requires identification collections of insects, and field trip to supplement class work.

842 Plant Disease (3)

Lecture 2 hours; laboratory 2 hours.
Comprehensive study of the causes and effects of diseases in plants, discusses the nature of fungi, bacteria, virus and physiological plant problems and their control.

843 Weed Control (3) CSU

Lecture 2 hours; laboratory 2 hours.
Identification, life histories and controls of common, noxious and poisonous weeds; weed control methods for landscapes, nurseries, parkways and for various crops.

844 Integrated Pest Management (3) CSU

Prerequisite: Agriculture 840 and 841.
Lecture 2 hours; laboratory 2 hours.
Integrated approach to plant protection utilizing all methods of pest control, selection criteria for controls accepted, problem solving and recommendation writing.

845 Biological Pest Control (1)

Lecture 1 hour.
Natural approach to pest management based on understanding agro-eco systems. Control of insects, mites and weeds using parasites and predators. Insectary operations, collection and release methods.

848 Training for Pest Control License (3)

Lecture 3 hours.
Covers the subject matter of the examination for Agricultural Pest Control Advisers License.

849 Nematode Control (1)

Lecture 1 hour.
Parasitic nematodes, their identification, classification and structure. Nematode sampling, damage, diseases and control measures.

850 Plant Growth Regulations (1) CSU

Lecture 1 hour.
Natural and synthetic substances used to control the growth of economic plants, chemical characteristics, plant responses, use and methods of application.

851 Vertebrate Pest Control (1)

Lecture 1 hour.
Vertebrate pests injurious to agricultural crops. Identification, life histories, and control methods. Covers gophers, ground squirrels, mice, rats, and others.

852 Residential Pest Control (1)

Lecture 1 hour.
Identification of and control methods for common pests found around the homestead, including indoor and outdoor pests, ornamental, fruit, and vegetable pests.

854 Pest Control Equipment (1)

Lecture 1 hour.
Pest control equipment, types, maintenance, care and sources.

896 Horticulture Projects (6) CSU

Prerequisite: A horticulture production course covering the field in which the project is undertaken, or concurrent enrollment in such a production course.

Laboratory 12 hours.

Involves planning, developing, and completing an individual horticultural production project under the guidance of a faculty advisor, on or off the college campus.

Offered every semester.

901 Natural Resources Conservation (3) *UC:CSU

(Same as Environmental Science 2. Credit not given for both courses.)

Prerequisite: Concurrent enrollment in Agriculture 902 for all NRM majors.

Lecture 3 hours.

Surveys the development of the conservation ethic in the United States and abroad and human populations in relation to natural resources. Examines the ecological basis of conservation, major ecosystems, their energy flow and resource relationships. Discusses plant and animal population dynamics, pollution, and pest control. Covers current government programs, legislation, and activities of conservation organizations. Studies practical conservation procedures and research applicable to improving environmental resources including soil, water, forests, fisheries, wildlife (including endangered species), air, and open spaces.

902 Natural Resources Laboratory (1) CSU

Prerequisite: Concurrent enrollment in Agriculture 901.

Laboratory 2 hours.

Involves practical field work in the Nature Center and a study of natural plant and animal communities of California. Includes maintenance, planting procedures, and conservation concepts practiced in local, state, and national parks. Field trips required.

905 Introduction to Outdoor Recreation (2) CSU

Lecture 2 hours.

Studies the development and management of rural and urban recreational enterprises. Includes a study of national and state parks, forests and historical sites. Covers practical recreational practices, including the development and operation of rural and urban picnic, swimming, boating, horseback riding, hunting preserves, and fishing waters.

906 Outdoor Recreation Management Laboratory (1) CSU

Prerequisite: Concurrent enrollment in Agriculture 905.

Laboratory 2 hours.

Involves field trips to various local agencies to observe and discuss recreational development, facilities, and people management. Includes urban, rural, and private recreation operations. Covers career and job opportunities.

920 Natural Resources Construction Techniques (2) CSU

Lecture 2 hours; laboratory 2 hours.

Includes concepts of basic plumbing and working with concrete, wood, and earth as applied to wildland use and recreational facilities. Trail layout and construction, stream modification and check-dam construction included. Teaches plans, materials, and cost analysis of projects. Covers use of hand tools and power equipment. Nature Canyon and agricultural areas will be utilized for projects.

930 Maps/Aerial Photos (2) CSU

Lecture 1 hour; laboratory 2 hours.

Basic concepts and principles of resource maps and the interpretation of aerial photographs. Includes computation of land areas, soil and plant cover, and the identification of objects by symbol or image. Covers the use of these tools as applied to field work and resource management techniques.

931 Natural Resource Measurement (2) CSU

Lecture 1 hour; laboratory 2 hours.

Techniques of field data collection for the natural resources, including soil, water, plants, and animals. Covers tools, sampling techniques, data collection methods, and the organization and presentation of field data.

940 Introduction to Forest Management (2) UC:CSU

Lecture 2 hours.

Presents the history of forestry and the lumber industry, the development of the profession, forest legislation, and the forest resources, its management and utilization. Studies the various disciplines and sciences involved in forest management, forestry as related to environment and society, and explores job opportunities.

941 Forest Management Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 940.

Laboratory 2 hours.

Involves practical work, forest nursery procedures, tree identification, tree planting techniques. Also covers forest measurements and other aspects of the forest as a multiple-use resource. Field trip to selected locations. Includes career and job opportunities.

942 Urban Forestry (2)

Lecture 1 hour; laboratory 2 hours.

Studies the emerging interest in developing and managing urban forests. Includes the environmental uses and benefits of trees in the urban environment; street tree and park plantings; windbreaks and climate moderating effects. Covers the use of trees as an energy source including recycling and fuelwood concepts. Field trips required.

944 Global Forestry (2)

Lecture 2 hours.

Examines the world's forests, their extent, status, and values. Discusses the cultural and social values of forests, and their value in world economic development. Includes current issues of deforestation, global warming, and agroforestry. Covers career opportunities.

950 Introduction to Wildlife Management (2) CSU

Lecture 2 hours.

Presents the history of wildlife management and current wildlife problems, including the ecology of wildlife, migrational patterns, and population dynamics. Considers the emerging national interest in wildlife and reviews wildlife literature and careers.

951 Wildlife Management Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 950.

Laboratory 2 hours.

Animal species life history study and field identification. Field trips to various wildlife management agencies and areas. Practical work in habitat analysis and improvement procedures. Career and job opportunities.

960 Wildland Fire Science (2) CSU

Lecture 2 hours.

Provides the NRM major with a fundamental knowledge of the factors affecting wildland fire prevention, fire behavior, and control techniques. Covers fire ecology, effects on other resources, and the use of prescribed fire.

961 Wildland Fire Science Laboratory (1)

Prerequisite: Concurrent enrollment in Agriculture 960.

Laboratory 2 hours.

Combines field trip and the application of wildland fire science and control procedures to the development of a fire control plan. Emphasizes the use of maps and analysis of vegetation, terrain, and land use as applied to fire protection and control.

970 Range Management (3) CSU

Lecture 2 hours; laboratory 2 hours.

Applies principles of range management to the utilization and conservation of land resources. Undertakes a study of range vegetation, soil conditions, and evaluation of livestock grazing problems and practices. Emphasizes California land conditions. Includes several field trips for observation work.

975 California Native Plants (3) CSU

Lecture 2 hours; laboratory 2 hours.

Native plants of Southern California. Emphasizes identification, plant community concepts, and native plant ecology. Covers the use of identification keys, classification concepts, and management implications of the various vegetation types. Intended primarily for NRM majors.

185 Directed Study — Agriculture (1) CSU RPT 2

285 Directed Study — Agriculture (2) CSU

385 Directed Study — Agriculture (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Agriculture on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Agriculture (1) CSU RPT 3

921 Cooperative Education — Agriculture (2) CSU RPT 3

971 Cooperative Education — Agriculture (3) CSU RPT 3

981 Cooperative Education — Agriculture (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum of one course.*

AMERICAN SIGN LANGUAGE/ INTERPRETING

1 American Sign Language I (4) CSU

Lecture 4 hours.
Develops basic vocabulary and grammar of American Sign Language. Emphasis is placed on receptive skills. Incorporates vital aspects of the Deaf culture and community.

Normally offered in the Fall semester only.

2 American Sign Language II (4) CSU

Prerequisite: American Sign Language 1 with a grade of "C" or better, or equivalent.
Lecture 4 hours.
Completes the study of elementary vocabulary and grammar. Increased development of inflectional and nonmanual behavior patterns. Incorporation of selected aspects of Deaf culture and community within receptive and expressive conversations.

Normally offered in the Spring semester only.

3 American Sign Language III (4) CSU

Prerequisite: American Sign Language 2 with a grade of "C" or better, or equivalent.
Suggested concurrent enrollment in American Sign Language 30.
Lecture 4 hours.
Continued development of American Sign Language grammar, with special emphasis on idiomatic constructions. Provides further development of conversational techniques focusing on expressive skills. Expanded study of Deaf cultural issues.

Normally offered in the Fall semester only.

4 American Sign Language IV (4) CSU

Prerequisite: American Sign Language 3 with grade of "C" or better.
Suggested concurrent enrollment in American Sign Language 31.
Lecture 4 hours.
Advanced study of American Sign Language grammar. Further development and refinement of American Sign Language skills and fluency. Accentuates aspects of Deaf culture and community through spontaneously generated conversations.

Normally offered in the Spring semester only.

5 Introduction to Interpreting (3) CSU

Prerequisite: Completion of American Sign Language 3 with a grade of "C" or better.
Suggested concurrent enrollment in American Sign Language 4.
Lecture 3 hours.
Surveys the basic theories, guidelines, principles, and practices of interpreting/transliterating, including an historical overview, role of the interpreter, and analysis of various sign systems.

Normally offered in the Spring semester only.

6 Voice to Sign Interpreting I (4) CSU

Prerequisite: Completion of American Sign Language 4 and 5 with a grade of "C" or better.
Suggested concurrent enrollment in American Sign Language 10.
Lecture 3 hours; laboratory 2 hours.
Lecture: Development of voice-to-sign interpreting/transliterating skills on a beginning level.
Laboratory: Provides the interpreter education student with "hands-on" experience in the interpreting situation. Students will have directed practice in interpreting a variety of communication settings, dialogues, narratives, and lectures.

Normally offered in the Fall semester only.

7 Voice to Sign Interpreting II (4) CSU

Prerequisite: Completion of American Sign Language 6 with a grade of "C" or better.
Recommended: Completion of English 101.
Suggested concurrent enrollment in American Sign Language 11.
Lecture 3 hours; laboratory 2 hours.
Lecture: Continues development of voice-to-sign interpreting/transliterating skills on an intermediate level.
Laboratory: Provides the interpreter education students with "hands-on" experience in the interpreting situation. Students will have directed practice in interpreting a variety of communication settings, dialogues, narratives, and lectures.

Normally offered in the Spring semester only.

10 Sign to Voice Interpreting I (4) CSU

Prerequisite: Completion of American Sign Language 4 and 5 with a grade of "C" or better.
Suggested concurrent enrollment in American Sign Language 6.
Lecture 3 hours; laboratory 2 hours.
Lecture: Development of sign-to-voice interpreting/transliterating techniques and principles on a beginning level.
Laboratory: Provides practical application of sign-to-voice techniques and experiential development of sign-to-voice skills.

Normally offered in the Fall semester only.

11 Sign to Voice Interpreting II (4) CSU

Prerequisite: Completion of American Sign Language 10 with a grade of "C" or better.
Suggested concurrent enrollment in American Sign Language 7.
Recommended: Completion of Speech Communication 101.
Lecture 3 hours; laboratory 2 hours.
Continues development of sign-to-voice interpreting/transliterating skills on an advanced level.

Normally offered in the Spring semester only.

12 Specialized Interpreting (3) CSU

Prerequisite: Completion of American Sign Language 6.
Lecture 3 hours.
Develops student's knowledge in various specialized areas of interpreting, for example; educational, religious, legal, and medical.

Normally offered in the Spring semester only.

15 Linguistics for Interpreters (3) CSU

Prerequisite: Completion of American Sign Language 2; and Anthropology 104 or Linguistics 1 or equivalent.
Lecture 3 hours.
Provides the student with information and research concerning the phonetic, morphological, syntactic, and semantic properties of American Sign Language. Covers neurolinguistics, psycholinguistics, and sociolinguistics, as well as comparative studies of natural signed languages.

16 Creative Signing (2) CSU

Prerequisite: Completion of American Sign Language 2.
Suggested concurrent enrollment in American Sign Language 3.
Lecture 2 hours.
Studies techniques of facial expression, characterization, body movement, and spatialization as it relates to American Sign Language. Development of expressive sign language skills through the use of poetry, songs, and skits.

Normally offered in the Fall semester only.

17 Ethics and Professional Standards of Interpreting (3) CSU

Prerequisite: Completion of American Sign Language 5.
Suggested concurrent enrollment in American Sign Language 6.
Lecture 3 hours.
Discussion and application of the Code of Ethics published by Registry of Interpreters for the Deaf. Provides experience in appropriately solving ethical problems related to the professional environment.

Normally offered in the Fall semester only.

25 American Sign Language Laboratory (1) CSU RPT 1

Prerequisite: Completion of or concurrent enrollment in American Sign Language 1.
Laboratory 3 hours.
Provides opportunities for practical conversation on everyday topics, cultural material, and expansion of vocabulary according to student interest or need.

30 Fingerspelling I (1) CSU

Prerequisite: Completion of American Sign Language 1 or equivalent.
Laboratory 2 hours.
Develops skills in expressive and receptive use of the Manual Alphabet. Deals with specific individual problems and techniques for corrections.

Normally offered in the Fall semester only.

31 Fingerspelling II (1) CSU

Prerequisite: Completion of American Sign Language 30 with a grade of "C" or better or equivalent.
Laboratory 2 hours.
Continued development of expressive and receptive Manual Alphabet skills.

Normally offered in the Spring semester only.

40 Introduction to Deaf Culture (3) CSU

Prerequisite: Completion of American Sign Language 2 and suggested concurrent enrollment in American Sign Language 3.
Lecture 3 hours.
Covers historical, philosophical, educational, psychological and social aspects of the deaf and hearing impaired. Emphasizes Deaf culture and the social processes affecting and influencing its member.

Normally offered in the Fall semester only.

185 Directed Study -- American Sign Language (1) RPT 2

285 Directed Study -- American Sign Language (2)

385 Directed Study -- American Sign Language (3)

Prerequisite: American Sign Language 1 or equivalent.
Conference 1 hour per unit.
Allows students to pursue Directed Study in American Sign Language on a contract basis under the direction of a supervising instructor.

ANATOMY

(See also Physiology)

1 Introduction to Human Anatomy (4) UC:CSU (CAN BIOL 10)

Prerequisite: Biology 3, 6 or concurrent enrollment.
Lecture 3 hours; laboratory 3 hours.
Provides a basic course in human anatomy. Includes lectures and demonstrations on human organs and organ systems. Requires each student to dissect a mammal that is comparable in structure to the human body, and to view a demonstration dissection of a human cadaver.

ANTHROPOLOGY

101 Human Biological Evolution (3) UC:CSU (CAN ANTH 2)

Lecture 3 hours.
Explores the field of Biological Anthropology emphasizing the evolution of the human species. Topics include human heredity, mechanisms of evolutionary change, human variation, and the reconstruction of human evolutionary history through examination of the fossil record and comparative studies of our closest biological relatives, the living monkeys and apes.

102 Human Ways of Life: Cultural Anthropology (3) UC:CSU (CAN ANTH 4)

Lecture 3 hours.
Presents a broad survey of human culture including the study of human society, language, religion, political and economic organization, with examples drawn from contemporary preliterate, peasant, and urban societies.

103 Archaeology: Reconstructing the Human Past (3) UC:CSU

Lecture 3 hours.
Considers Archaeology as an integral part of the larger field of Anthropology. Course deals with the methods the archaeologist uses to view the world of the past. The methods discussed illustrate the techniques used by the archaeologist to gather and interpret the data recovered from excavation.

104 Human Language and Communication (3) UC:CSU

(Same as Linguistics 1. Credit not given for both courses.)

Lecture 3 hours.
This introductory course in linguistics surveys the great variety of ways humans communicate, both verbally and non-verbally. Focuses on the structure, function, and history of language, with selections on the sociology and psychology of language, language learning, and the origins and evolution of language.

105 Prehistoric Peoples (3) UC:CSU

Lecture 3 hours.
A survey of world prehistory from the earliest evidence of the origin of culture to the development of urbanization. The prehistoric process and sequence for various parts of the world will be examined, including Europe, the Americas, Africa, and Asia.

111 Laboratory in Human Biological Evolution (2) UC:CSU

Prerequisite: Anthropology 101, or concurrent enrollment.
Lecture 1 hour; laboratory 2 hours.
Offers laboratory exploration of selected topics in biological anthropology including genetics, human variation, the living primates, and human paleontology.

113 Field Archaeology (3) CSU RPT 1

Prerequisite: None.
Lecture 1 hour; laboratory 6 hours.
Presents an introduction to the theory and method of field work in Archaeology. This is a class in archaeological excavation and related data gathering methods. The course emphasizes field techniques through actual student participation in excavation, survey and related field methods.

Normally offered in the Spring semester only.

121 Anthropology of Religion, Magic, and Witchcraft (3) UC:CSU

Lecture 3 hours.
An anthropological examination of the phenomenon of religion. Emphasis will be placed upon how religion is integrated into culture. The course includes an examination of the ideas that have been developed by anthropologists about how humans relate to their notion of the supernatural.

132 North American Indians (3) UC:CSU

Lecture 3 hours.
Offers a broad survey of the American Indians living north of Mexico. Special emphasis is placed on the Indians of California. The various aboriginal groups surveyed are viewed as they existed at the time of historical contact.

141 Medical Anthropology (3) CSU

Lecture 3 hours.
By comparing a wide range of different kinds of health/healing systems in ancient as well as modern nations, this course examines how medicine reflects changing attitudes, religious beliefs, politics and technology. Practices in China, India, Egypt, Peru, Mexico, and Canada will be compared. However, focus is on the U. S., and includes current issues such as environmental and social causes of disease, rights to live/die, preventive holistic care, religious healings, genetic engineering and federally paid insurance programs.

150 Current Topics in Anthropology (3) †UC:CSU

Lecture 3 hours.
Discusses selected topics of current interest in the fields of Biological Anthropology, Cultural Anthropology, Archaeology, and Linguistics.

185 Directed Study – Anthropology (1) †UC:CSU RPT 2

285 Directed Study – Anthropology (2) †UC:CSU

385 Directed Study – Anthropology (3) †UC:CSU

Prerequisite: Any two of the following courses: Anthropology 101, 102, 103, 104.

Conference 1 hour per unit.
Allows students to pursue Directed Study in Anthropology on a contract basis under the direction of a supervising instructor.

ARCHITECTURE

UC Credit Limit: Maximum of 17 units.

1 Introduction to Architecture (1) UC:CSU RPT 1

UC Credit Limit: Maximum one unit.
Lecture 1 hour.
Introductory course exploring the fields of architecture and construction technology. Students will gain an understanding of architecture and construction technology programs. Visits to architects'offices, building sites, and advanced schools of architecture.

5 Architectural Drawing I (3) CSU

Prerequisite: One semester of high school architectural drawing.
Lecture 1 hour; laboratory 5 hours.
Teaches the techniques of architectural drafting, its conventions and symbols through the preparation of simple construction details and drawings. Surveys the scope and personal requirements of the architectural profession and related building trades.

6 Architectural Drawing II (3) CSU

Prerequisite: Architecture 5 with a grade of "C" or better.
Lecture 1 hour; laboratory 5 hours.
Develops drafting skill and fundamental understanding of building by preparing working drawings with necessary details for wood frame construction.

7 Architectural Drawing III (3) CSU

Prerequisite: Architecture 5 or 6.
Lecture 1 hour; laboratory 5 hours.
Offers a study of construction methods, materials, and building ordinances. Requires students to prepare detail drawings for commercial buildings in concrete and steel or similar problems.

8 Architectural Drawing IV (3) CSU

Prerequisite: Architecture 6 or 7.
Lecture 1 hour; laboratory 5 hours.
Offers a study of construction methods, materials, and building ordinances. Requires students to prepare design and preliminary drawings for small commercial-type building or similar problems.

9 Elements of Architecture (3) UC:CSU

Lecture 1 hour, laboratory 5 hours.
Studies architectural basic design and composition mainly through two-dimensional drawing media.

10 Freehand Drawing I (2) UC:CSU RPT 1

Corequisite: Architecture 12.
Lecture 2 hours; laboratory 2 hours.
Drawing ability as developed primarily by pencil, ink, and watercolor. Study is made of composition, form, value, and scale, and centers mainly on drawing development employing architectural forms.

12 Architectural Rendering (2) CSU

Corequisite: Architecture 10.
Lecture 1 hour; laboratory 3 hours.
Teaches the techniques of graphic rendering using various media. Stresses both freehand drawing and drafting board methods.

15 Applied Descriptive Geometry (2) CSU

(Same as Industrial Technology 218. Credit not given for both courses.)
Prerequisite: One semester of architecture.
Lecture 1 hour; laboratory 3 hours.
Provides training in the analysis and solution of orthographic projection problems. Emphasis is placed on solving three-dimensional space problems by exposure to and interpretation of points, lines, and planes in primary, secondary, and successive auxiliary views. Theory and practice are included that involve visualization and graphic representation of intersections, angles, parallelism, perpendicularity, and revolutions. Orthographic and pictorial abstract examples are taken from engineering disciplines related to design and industrial technology.

18 Strength of Architectural Materials I (3) CSU

Lecture 3 hours.
Includes material relative to the strength, mechanical principles and design (stresses, tension, compression, shear, and bending) of building materials, and their uses in foundations, floors, walls, columns, and roofs.

20 Methods of Construction (2) CSU

Prerequisite: Enrollment in Architecture or Construction.
Lecture 2 hours.
Emphasizes methods of construction in wood, steel and concrete.

21 Materials of Construction (3) CSU

Prerequisite: Architecture 5 and 20.
Lecture 3 hours.
Studies the nature and characteristics of materials, along with their appropriate uses for given construction purposes.

22 Equipment of Buildings (3) CSU

Prerequisite: Architecture 5 and 20 and Mathematics 145 or equivalent.
Lecture 3 hours.
Applies the basic principles of design, selection and operation of equipment in buildings to water, plumbing, heating, air conditioning, lighting and acoustics.

23 Construction Estimating (3) CSU

Lecture 3 hours.
Studies methods used in determining quantities and costs of labor and materials as related to construction.

30 Residential Planning (3) CSU RPT 3

Prerequisite: Architecture 5.
Lecture 1 hour; laboratory 5 hours.
Offers a study of the single family residence, its layout, liveability, size, orientation, cost, furnishings, equipment and decoration.

33 Basic Architectural Design I (3) UC:CSU

Prerequisite: Architecture 5 and 9.
Lecture 1 hour; laboratory 5 hours.
Explores the nature and limitations of materials using two-dimensional studies of form and composition in black and white and color.

34 Basic Architectural Design II (3) UC:CSU

Prerequisite: Architecture 9 or 33.
Lecture 1 hour; laboratory 5 hours.
Extends the theory of color and the use of various materials in three-dimensional compositions.

†UC: See page 78.

37 Computer Aided Design and Drafting (3)

Prerequisite: Architecture 5 and 6.
Lecture 1 hour; laboratory 5 hours.
An introduction to computer design and drafting for architecture. Provides a survey of current CAD systems plus hands-on experience.

41 Architectural Model Building (2) UC:CSU

Lecture 1 hour; laboratory 3 hours.
Acquaints students of architecture with the techniques and materials for constructing architectural study models.

52 Concrete Construction Design and Practice (3) CSU

Lecture 3 hours.
Offers a practical introduction to modern concrete design theory and construction practices as employed in the construction of buildings, roads, flood control works, and miscellaneous structures.

185 Directed Study — Architecture (1) CSU RPT 2

285 Directed Study — Architecture (2) CSU

385 Directed Study — Architecture (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Architecture on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Architecture (1) CSU RPT 3

921 Cooperative Education — Architecture (2) CSU RPT 3

931 Cooperative Education — Architecture (3) CSU RPT 3

941 Cooperative Education — Architecture (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

ART

101 Survey of Art History I (3) UC:CSU (CAN ART 2)

Recommended: English 28 or 101.
Lecture 3 hours.
A survey of architecture, sculpture, and painting from the prehistoric, ancient, classical and medieval periods.

102 Survey of Art History II (3) UC:CSU (CAN ART 4)

Recommendeded: English 28 or 101.
Note: Art 101 is not a prerequisite for 102.
Lecture 3 hours.
A survey of painting, sculpture, and architecture of the Western tradition from the fourteenth century to the twentieth century. Study is given to style, iconography, and the social, political, and economic context that accompanies a work of art.

103 Art Appreciation I (3) UC:CSU

Lecture 3 hours.
Furthers the understanding and appreciation of the visual arts. Recommended for the non-Art major. Recommended but not required of Art majors.

111 History of Contemporary Art (3) UC:CSU

Recommendeded: Art 101 and Art 102.
Lecture 3 hours.
Covers major trends in art from 1900 to the present day. Works of art are presented through slide presentations, class discussion and field trips to museums, galleries and artists' studios.

132 Technical Illustration I (4)

(Formerly Art 631)
Lecture 2 hours; laboratory 4 hours.
Offers production illustration with particular attention to the principles of isometric drawing and includes the transposition of orthographic views to three dimensional isometric representation.

133 Technical Illustration II (4)

Prerequisite: Art 132.
Lecture 2 hours; laboratory 4 hours.
Continues Technical Illustration I with extended projects, and introduces students to areas of schematics, charts and graphs, industrial posters, and various types of visual aids.

134 Production Illustration I (4) CSU RPT 4

Prerequisite: Art 133.
Lecture 2 hours; laboratory 4 hours.
Further explores areas covered in Art 133. In addition applies the use of orthographics and two point perspective to the Technical field. Freehand illustration techniques are developed. Rendering methods of technical art for specialized reproduction are studied. Introduction to Macintosh II computer fundamentals with basic projects in orthographic format.

135 Production Illustration II (4) CSU

Prerequisite: Art 134.
Lecture 2 hours; laboratory 4 hours.
Covers advanced projects isometric, dimetric, trimetric, and perspective illustration. Expands students' knowledge of the source of technical illustration. Major illustrations are executed in the areas of exploded views, section-cuts, and art for slide and overhead transparencies. Students will create 2 and 3 dimensional drawings on state of the art Macintosh II equipment.

201 Drawing I (3) *UC:CSU (CAN ART 8)

Recommendeded: Concurrent enrollment in Art 501.
Lecture 2 hours; laboratory 2 hours.
Involves a variety of media, emphasizing visual perception, critical analysis, art fundamental, and cultural history of drawing.

202 Drawing II (3) *UC:CSU

Prerequisite: Art 201 and 501, both with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Extends the experiences of basic drawing with special emphasis upon pictorial organization. Stresses historical cultural evolution of drawing.

204 Life Drawing I (3) *UC:CSU

Prerequisite: Art 201.
Lecture 2 hours; laboratory 2 hours.
Studies construction of and composition with the human figure. Stresses critical analysis of the use of the figure in historical context.

205 Life Drawing II (3) *UC:CSU

Prerequisite: Art 204.
Lecture 2 hours; laboratory 2 hours.
Continuation of Life Drawing I, emphasizing figure construction and composition applying a variety of media and concepts.

206 Life Drawing III (3) *UC:CSU

Prerequisite: Art 205.
Lecture 2 hours; laboratory 2 hours.
Continuation of figure construction and composition applying a variety of media and concepts.

207 Life Drawing IV (3) *UC:CSU

Prerequisite: Art 206.
Lecture 2 hours; laboratory 2 hours.
Continuation of figure construction and composition applying a variety of tools and techniques. Independent projects are stressed.

209 Perspective Drawing I (3) *UC:CSU

Lecture 2 hours; laboratory 2 hours.
Develops the understanding and manual skills necessary in the making of drawings which accurately represent three-dimensional forms in one-, two- and three-point perspective, with multiple secondary vanishing points.

300 Introduction to Painting (3) *UC:CSU (CAN ART 10)

Prerequisite: Art 202 with grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Stresses variety of techniques in use of medium. Emphasis on cultural history and criticism in field of painting.

301 Watercolor Painting I (3) *UC:CSU

Prerequisite: Art 201 with grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Offers experience in a variety of techniques. Emphasis on cultural history and criticism in field of watercolor painting.

302 Watercolor Painting II (3) *UC:CSU

Prerequisite: Art 301
Lecture 2 hours; laboratory 2 hours.
Continuation of Watercolor I. Emphasis on composition through perceptual and conceptual approaches. Theory, history, and criticism in field of watercolor painting.

304 Acrylic Painting I (3) *UC:CSU

Prerequisite: Art 300 with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Continuation of Art 300.

305 Acrylic Painting II (3) *UC:CSU

Prerequisite: Art 304
Lecture 2 hours; laboratory 2 hours.
Continuation of Art 304.

306 Acrylic Painting III (3) *UC:CSU

Prerequisite: Art 305
Lecture 2 hours; laboratory 2 hours.
Continuation of Art 305.

307 Oil Painting I (3) *UC:CSU

Laboratory 6 hours.
Stresses skills and techniques in the medium. Both traditional and contemporary approaches to ideas and materials are explored as a means of developing personal and/or professional expression.

400 Introduction to Printmaking (3) **UC:CSU

Recommendeded: Art 201 and 501.
Lecture 1 hour; laboratory 5 hours.
Introduces students to the basic printmaking processes including etching, silkscreen, lithography, wood block and linoleum block printing. Covers the history of prints while developing a critical awareness.

401 Etching I (3) **UC:CSU

Prerequisite: Art 400.
Lecture 1 hour; laboratory 5 hours.
Provides instruction in traditional and contemporary forms of etching and related intaglio processes such as engraving, collagraphic and embossed printing processes. Reviews the history of prints. Applies intaglio techniques to problems of visual perception and critical analysis.

402 Etching II (3) **UC:CSU

Prerequisite: Art 401.
Lecture 1 hour; laboratory 5 hours.
Provides further exploration of etching and related intaglio processes such as embossed prints, collagraphs and engraving. Emphasizes color printing. Further develops analytical skills and critical awareness.

403 Lithography I (3) **UC:CSU

Recommendeded: Art 201, 400 and 501.
Lecture 1 hour; laboratory 5 hours.
Introduces students to traditional methods of lithography. Covers a history of prints. Integrates theory and practice in a historical foundation.

404 Lithography II (3) **UC:CSU

Recommendeded: Art 403.
Lecture 1 hour; laboratory 5 hours.
Continues study in lithography by introducing students to contemporary processes. Further develops analytical skills and critical awareness. Discusses marketing of prints.

405 Silkscreen Printmaking I (3) **UC:CSU

Recommendeded: Art 400 and 501.
Lecture 1 hour; laboratory 5 hours.
Introduces students to the basic silkscreen processes. Covers a history of printing. Applies serigraphy techniques to problems of visual perception and critical analysis.

406 Silkscreen Printmaking II (3) **UC:CSU

Prerequisite: Art 405.
Lecture 1 hour; laboratory 5 hours.
Students further explore the possibilities of the silkscreen process, gain an enhanced critical awareness, and learn about the marketing of prints.

407 Relief Printmaking I (3) **UC:CSU

Recommended: Art 400.
Lecture 1 hour; laboratory 5 hours.
Applies basic relief techniques to problems in visual perception and critical analysis. Integrates the theory of composition with its historical and critical foundation.

408 Relief Printmaking II (3) **UC:CSU

Prerequisite: Art 407.
Lecture 1 hour; laboratory 5 hours.
Introduces contemporary and experimental forms of relief printing including collagraphs, embossed prints, plaster prints, and paper making. Further develops analytical skills and critical analysis.

500 Introduction to Design (3) **UC:CSU

Planned to satisfy the General Education Requirement in Art for non-Art majors; also recommended for Art majors.
Lecture 2 hours; laboratory 2 hours.
Provides an introduction to art. Integrates the theory of design with historical and cultural foundations. Applies basic design techniques to problems in visual perception and critical analysis.

501 Beginning Two-Dimensional Design (3) **UC:CSU (CAN ART 14)

Prerequisite: Concurrent enrollment in Art 201 recommended.
Lecture 2 hours; laboratory 2 hours.
A minimum of 5 hours per week outside preparation is required. Introduces the elements and principles of two-dimensional design common to the visual arts. Integrates the theory of design with historical and cultural foundations. Applies basic design techniques to problems in visual perception and critical analysis.

502 Beginning Three-Dimensional Design (3) **UC:CSU (CAN ART 16)

Recommendeded: Art 501.
Lecture 2 hours; laboratory 2 hours.
Introduces the principles of three-dimensional design utilizing a variety of techniques. Integrates the theory of design with historical and cultural foundations. Develops analytical skills and critical awareness.

506 Interior Design I (3) CSU

Recommendeded: Art 501.
Lecture 2 hours; laboratory 2 hours.
Studies historical tradition and cultural influences on color, furniture design and arrangement, materials and their application, costs, and changing viewpoints about the dwelling and its environment.

507 Interior Design II (3) CSU

Lecture 2 hours; laboratory 2 hours.
Continuation of 506.
Normally offered in the Spring semester.

519 Display Techniques (3)

Lecture 1 hour; laboratory 5 hours.
Provides practical application of design concepts as they relate to exhibitions, environments and displays; one hour lecture, laboratory, and five hours of assigned gallery projects.

600 Lettering I (3) CSU

Recommendeded: A basic design course or concurrent enrollment.
Lecture 2 hours; laboratory 2 hours.
Studies basic lettering forms with regard to various styles of the alphabet, their proportions and spacing. Laboratory work stresses the adaptation of lettering to advertising layout and poster design.

613 Graphic Design (3)

Recommendeded: A basic course in advertising art or Technical Illustration.
Lecture 2 hours; laboratory 2 hours.
Course covers areas of basic design and layout with emphasis on handskills. Students will prepare camera-ready art for commercial and technical brochures.

614 Graphic Communications I (4)

Prerequisite: Concurrent enrollment in Art 501.
Lecture 2 hours; laboratory 4 hours.
Introduces visual communication with emphasis on advertising art and design. Included are principles of advertising, advertising media, layout, lettering, typography, and the preparation of artwork for printing.

615 Graphic Communications II (4)

Prerequisite: Art 614.
Lecture 2 hours; laboratory 4 hours.
Continues Art 614 with greater emphasis upon skills and knowledge of contemporary processes in layout, typography, preparation of artwork, and printing processes as they relate to the work of the advertising designer.

616 Graphic Communications III (4)

Prerequisite: Art 615.
Lecture 2 hours; laboratory 4 hours.
Continues studies in advertising layout and design, illustration, photography, and the operation of equipment that would be used in a job situation.

617 Graphic Communications IV (4)

Prerequisite: Art 616.
Lecture 2 hours; laboratory 4 hours.
Reviews and extends the factual material and practical skills included in previous courses. Includes preparation of a portfolio of student's work for use in obtaining employment.

620 Illustration I (3) CSU

Prerequisite: Art 201, 209.
Lecture 2 hours; laboratory 2 hours.
Applies basic drawing techniques and design principles to problems in advertising and editorial illustration. Students will explore a variety of media and approaches oriented to contemporary demands in the field.

621 Illustration II (3)

Prerequisite: Art 620.
Lecture 2 hours; laboratory 2 hours.
Continues Art 620 with additional emphasis on the use of markers for the production of full color comprehensive drawings and illustrations.

622 Illustration for the Graphic Artist (3)

Prerequisite: Art 621.
Lecture 2 hours; laboratory 2 hours.
Extends basic principles and practices of advertising illustration to problems in graphic design and layout. Projects include the coordination of illustration with typography, photography and other visual media. Preparation of camera-ready artwork is explored.

628 Air Brush Techniques I (3)

Prerequisite: Art 614 and 631.
Lecture 2 hours; laboratory 2 hours.
Provides instruction and demonstrations in the operation of the airbrush as a means of accomplishing black and white rendering and photo retouching for both Commercial Art and Technical Art. Dwells on photo retouching and rendering in both fields with coverage in effective techniques and handling of the media.

629 Air Brush Techniques II (3)

Prerequisite: Art 628.
Lecture 2 hours; laboratory 2 hours.
Extends the knowledge and application of the airbrush techniques of Air Brush 628, with exercises and demonstrations in preparing full color photo retouching, rendering, and art work for both Commercial Art and Technical Art. Covers subjects from retouching color photographs through airbrush illustration, and an introduction to airbrush animation for motion pictures, with techniques of preparing airbrush art for presentation reproduction.

630 Air Brush Techniques III (3)

Lecture 2 hours; laboratory 2 hours.
Continuation of Art 629.

636 Computer Graphics (3)

Prerequisite: Art 201.
Recommended: Art 202
Lecture 1 hour; laboratory 4 hours.
An introduction to the fundamental concepts of computer graphics. Projects include computer animation and 3-D image crafting. Advertising applications include typesetting, layout design, logotype and corborate mark development.

700 Introduction to Sculpture (3) **UC:CSU

Prerequisite: Recommended Art 501 or 502
Lecture 1 hour; laboratory 5 hours.
Provides experiences in designing and executing sculptural form; technical experiences include modeling, casting and fabricating with sculptural media. Historical and cultural antecedents are discussed with emphasis on developing sculptural awareness.

701 Sculpture I (3) **UC:CSU

Prerequisite: Art 700 with a grade of "C" or better.
Lecture 1 hour; laboratory 5 hours.
Continues Art 700.

702 Sculpture II (3) **UC:CSU

Prerequisite: Art 701 with "C" or better.
Lecture 1 hour; laboratory 5 hours.
Continuation of Art 701.

703 Sculpture III (3) **UC:CSU

Prerequisite: Art 702 with "C" or better.
Lecture 1 hour; laboratory 5 hours.
Continuation of Art 702.

706 Clay Sculpture I (2) **UC:CSU

Recommendeded: Art 501 or 502.
Lecture 1 hour; laboratory 3 hours.
Provides experiences in designing and constructing contemporary sculptural forms using a variety of ceramic processes such as slab forming, press molding and slip casting from original molds.
Normally offered in the Spring semester.

707 Clay Sculpture II (2) **UC:CSU

Prerequisite: Art 706 with a grade of "C" or better.
Lecture 1 hour; laboratory 3 hours.
Continuation of Art 706 with emphasis on individualized course of study.
Normally offered in the Spring semester.

708 Introduction to Ceramics (3) **UC:CSU (CAN ART 6)

Recommendeded: Art 501 or 502.
Lecture 1 hour; laboratory 5 hours.
Presents basic ceramic design and construction techniques including handbuilding, wheel forming, surface enrichment, glazing, and firing. Emphasizes design and craftsmanship. Surveys the historical significance of ceramic art.

709 Ceramics I (3) **UC:CSU

Prerequisite: Art 706 or the equivalent with a grade of "C" or better.
Lecture 1 hour; laboratory 5 hours.
Continuation of Introduction to Ceramics with increasing emphasis on wheel forming, glaze formulation, and kiln management. Stresses further the concepts of design.

710 Ceramics II (3) **UC:CSU

Prerequisite: Art 709 or equivalent with a grade of "B" or better.
Lecture 1 hour; laboratory 5 hours.
Continuation of Art 709 with emphasis on individually planned projects.

711 Ceramics III (3) **UC:CSU

Prerequisite: Art 710 or equivalent with a grade of "B" or better.
Lecture 1 hour; laboratory 5 hours.
Continuation of Art 710 with an increased emphasis on individually planned projects.

721 Introduction to Jewelry (3) CSU

Recommendeded: Some preparation in design, Art 501 or 502.
Lecture 1 hour; laboratory 5 hours.
Presents the construction and/or fabrication of jewelry as study of three-dimensional design. Introduces varied experiences in working with precious and other metals. Emphasis is on individuality, craftsmanship, and design. Historical significance of jewelry design and its traditional technique are also studied.

722 Jewelry I (3) CSU

Prerequisite: Art 721 with a grade of "C" or better.
Lecture 1 hour; laboratory 5 hours.
Continues the study and construction of jewelry and metal design as well as the history of jewelry as an art form. Emphasis is upon individual awareness, expression, craftsmanship, and experimentation with three-dimensional form.

723 Jewelry II (3) CSU

Prerequisite: Art 722 with a grade of "C" or better.
Lecture 1 hour; laboratory 5 hours.
Continues the exploration of various facets of functional and non-functional jewelry and metal expression. Provides experience in enameling, repousse, forming, etching, and other methods of surface decoration and metal fabrication.

724 Jewelry III (3) CSU

Prerequisite: Art 723 with a grade of "C" or better.
Lecture 1 hour; laboratory 5 hours.
Continues advanced techniques and design concepts relative to jewelry fabrication and form. Encourages the use of new materials with the traditional. Provides further experience in a variety of historical and contemporary expression of jewelry forms.

801 Creative Communications (3)

Lecture/Demonstration 4 hours.
An integrative course for beginners, involving the pictorial arts, writing and body movement as vehicles for the investigation of various concerns such as perception, communication, creativity, change, self-identity, and philosophic attitudes.

805 Introduction to Fine Art Photography (3)

Recommendeded but not required, some experience in art and in basic darkroom techniques of developing film and making enlargements.
Lecture 1 hour; laboratory 5 hours.
Employs the tools and techniques of both the artist and the photographer to explore and develop creative and expressive projects.

806 Fine Art Photography I (3)

Prerequisite: Art 805.
Lecture 1 hour; laboratory 5 hours.
Continued use of tools and techniques for the photo artist to develop a style. Concepts are of most importance.

807 Fine Art Photography II (3)

Prerequisite: Art 806.
Lecture 1 hour; laboratory 5 hours.
Explores various aspects of a single concept directed toward presenting an exhibition.

185 Directed Study — Art Honors (1) †UC:CSU RPT 2

285 Directed Study — Art Honors (2) †UC:CSU

385 Directed Study — Art Honors (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Art on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Art (1) CSU RPT 3

921 Cooperative Education — Art (2) CSU RPT 3

931 Cooperative Education — Art (3) CSU RPT 3

941 Cooperative Education — Art (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum 16 units.*

***UC Credit Limit: Maximum 12 units including Photography 10.*

ASTRONOMY

1 Elementary Astronomy (3) UC:CSU

(Astronomy 1 with 2 same as Astronomy 3)
Lecture 3 hours.
Surveys the material contents of the universe at an introductory level designed primarily for non-science majors. Emphasizes the physical principles essential to fundamental understanding in astronomy. Discusses the tools of the astronomer, stars and stellar evolution, galaxies and quasars, cosmology, the solar system, and extra-terrestrial life.

2 Elementary Astronomy Laboratory (1) UC:CSU RPT 1

(Astronomy 1 with 2 same as Astronomy 3)
Prerequisite: Astronomy 1.
Laboratory and discussion, 2 hours.
Supplements the material of Astronomy 1. Includes use of astronomical instruments, motions of the sky, the celestial sphere, star charts, constellation study, lunar and planetary orbits, spectra of stars, and classification of galaxies. Telescopic observations will be made whenever possible and will include occasional field trips to nearby astronomy facilities.

3 Introductory Astronomy (4) UC:CSU

(Same as Astronomy 1 with 2)
Lecture 3 hours; laboratory 2 hours.
Combines lecture and laboratory content of Astronomy 1 and Astronomy 2. For further information see course descriptions of Astronomy 1 and Astronomy 2.

185 Directed Study — Astronomy (1) †UC:CSU RPT 2

285 Directed Study — Astronomy (2) †UC:CSU

385 Directed Study — Astronomy (3) †UC:CSU

Prerequisite: None.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Astronomy on a contract basis under the direction of a supervising instructor.

†UC: See page 78.

AUTOMOTIVE SERVICE TECHNOLOGY

Prerequisite: For any major in the Industrial Technology department, Industrial Technology 100 should be completed during the first or second semester of study.

1 Automotive Engines (5) CSU

Lecture 3 hours; laboratory 5 hours.
Presents a study of automotive engines. Encompasses fuel, cooling and lubricating systems. Students overhaul engines in the laboratory, including boring, pin-fitting, valve seat replacement, valve grinding, and other engine rebuilding procedures.

2 Suspension Brakes and Power Systems (5)

Lecture 3 hours; laboratory 5 hours.
Introduces wheel, brake, and suspension systems and service, including instruction on power brakes, power steering systems, and anti lock braking systems. Provides training and supervised repair on automobiles under actual shop conditions.

3 Engine Diagnosis and Tune-Up (5)

Prerequisite: Automotive Service Technology 4 or 14 strongly recommended.
Lecture 3 hours; laboratory 5 hours.
Emphasizes automotive engine diagnosis and tune-up problems pertaining to fuel, ignition, starting and charging systems. Shop training in ignition, emission control, and fuel systems on automobiles.

4 Starting and Charging Systems/Automotive Electrical Circuits (5)

(Same as Automotive Service Technology 14. Credit not given for both courses.)
Lecture 3 hours; laboratory 5 hours.
Deals with the theory and maintenance of charging and starting systems. Provides a working understanding of the electrical systems used on automotive machinery. Lab work includes repair work on starters, alternators, and trouble shooting components of the electrical system. Includes practice with the latest diagnostic equipment.

5 Standard Transmissions, Clutches, Drive Lines and Differentials (3)

Lecture 2 hours; laboratory 2 hours.
Examines manual shift type transmission including front drive transaxles. Discusses drive line problems including clutch, differential, and axle systems. Provides laboratory practice on these assemblies.

6 Automatic Transmissions (5)

Lecture 3 hours; laboratory 5 hours.
Provides lecture and laboratory work in the theory and servicing of several types of automatic transmissions currently in use.

7 Air Conditioning (3)

Lecture 2 hours; laboratory 2 hours.
Presents the latest information in air conditioning systems and servicing. Has shop practice in overhaul and installation of air conditioning systems.

20 Automotive Electronic Computer Control Systems (3)

Prerequisite: Automotive Service Technology 3 with a grade of "C" or better.
Lecture 3 hours.
The theory, operation, and repair systems of automotive engine computer systems.

21 Computer-Controlled Electronic Fuel Injection Systems (3)

Prerequisite: Automotive Service Technology 20 with a grade of "C" or better.
Lecture 3 hours.
The theory, operation, and repair of computer controlled electronic fuel injection systems.

23 The Clean Air Car (3)

Prerequisite: Students must successfully completed Automotive Service Technology 3, 20, and 21 with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
(Class meets for a State mandated 80 hours per semester.)
A State of California mandated course covering operation and repair of emission systems. Upon satisfactory completion of the course, students can obtain a Mechanic's Test and/or Repair License.

25 Fundamentals of Auto Mechanics (4)

Lecture 3 hours; laboratory 3 hours.
Provides a comprehensive introduction to the design, operation, and repair of various automotive systems. Emphasis is placed on owner-operator vehicle maintenance.

32 Automotive Service Technology Projects Laboratory: Chassis and Suspension Systems (1)

Prerequisite: Automotive Service Technology 2.
Laboratory 3 hours.
Provides increased laboratory experience in the diagnosis and repair of automotive chassis and suspension systems.

34 Automotive Service Technology Projects Laboratory: Electrical Circuits (2)

Prerequisite: Automotive Service Technology 4.
Laboratory 6 hours.
Provides increased laboratory experience in the diagnosis and repair of automotive electrical circuits.

36 Automotive Service Technology Projects Laboratory: Standard Transmissions, Clutches, Drive Lines and Differentials/ Air Conditioning (1)

Prerequisite: Automotive Service Technology 5.
Laboratory 3 hours
Provides increased laboratory experience in the diagnosis and repair of standard transmissions, clutches, drive lines and differentials/air conditioning.

185 Directed Study – Automotive Service Technology (1) RPT 2

285 Directed Study – Automotive Service Technology (2)

385 Directed Study – Automotive Service Technology (3)

Conference 1 hour per unit.
Allows students to pursue Directed Study in Automotive Service Technology on a contract basis under the direction of a supervising instructor.

911 Cooperative Education – Automotive Service Technology (1) RPT 3

921 Cooperative Education – Automotive Service Technology (2) RPT 3

931 Cooperative Education – Automotive Service Technology (3) RPT 3

941 Cooperative Education – Automotive Service Technology (4) RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.
Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

BIOLOGY

(See also Anatomy, Environmental Science, Family and Consumer Studies, Microbiology, Oceanography, and Physiology.)

3 Introduction to Biology (4) *UC:CSU

Closed to students who have completed Biology 6.
Lecture 3 hours; laboratory 3 hours.
Presents a comprehensive study of the major principles of biology. Covers such topics as cell physiology, energy flow and transformation, development, genetics, and evolution. Meets the general education laboratory experience requirement. This course is not intended for Life Science or Pre-med majors.

6 General Biology I (5) UC:CSU (CAN BIOL SEQ A)

Prerequisite: A college level chemistry course.
Lecture 3 hours; laboratory 6 hours.
Designed for Life Science and pre-med majors. Deals with the molecular biology of the cell, molecular and Mendelian genetics, bioenergetics, and evolution. Examines the biology of plants and invertebrate animals - their structure, physiology and evolution.

7 General Biology II (5) UC:CSU (CAN BIOL SEQ A)

Note: Biology 6 is not a prerequisite for Biology 7.
Lecture 3 hours; laboratory 6 hours.
Designed to complete the study of the basic principles of biology. Deals with embryology and development of vertebrates, structure and physiology of vertebrate organ systems, evolution of vertebrates. Examines populations and their relationships to biological communities.

10 Natural History I (4) UC:CSU

Not open to students who have completed Biology 2.
Lecture 3 hours; laboratory 3 hours.
Deals with the biology of the environment; the interrelationships of climate, plants, animals, and humans. Also includes an ecological and natural history survey of the common forms of seashore life, insects, fish amphibians, reptiles, birds, mammals, trees, and shrubs. California natives will be emphasized. This class meets off campus several times during the semester.

11 Natural History II (3) **UC:CSU

Recommended: A college biology course.
Note: This course is taught in 1-unit modules. No credit for repeated modules.
Lecture 2 hours; laboratory 2 hours.
Deals with the biology of the environment and the interrelationship of climate, animals, plants, and humans. Course will include an in-depth ecological and systematic survey of a few selected ecosystems of the world.

12 Natural History and Field Biology I (3) **UC:CSU

This course is taught in 1-unit modules. No credit for repeated modules.
Lecture 2 hours; laboratory 2 hours.
Deals with the biology of the environment and the interrelationship of climate, animals, plants, and humans. Course will include an in-depth ecological and systematic survey of a few selected ecosystems of the world.

18 Natural History and Field Biology II (3) **UC:CSU

This course is taught in 1-unit modules. No credit for repeated modules.
Lecture 2 hours; laboratory 2 hours.
Deals with the biology of the environment and the interrelationship of climate, animals, plants, and humans. Course will include an in-depth ecological and systematic survey of a few selected ecosystems of the world.

25 Human Biology (3) *UC:CSU

Closed to students who have completed Biology 6.
Lecture 3 hours.
Examines the biology of Homo sapiens including its origin, development and future on earth. Contemporary concepts such as genetics, embryology, contraception and environmental problems are examined with Homo sapiens as the focal point. This course is not intended for Life Science majors.

39 Sexually Transmitted Diseases (3) UC:CSU

Lecture 3 hours.
This course presents a broad overview of the nature and causes of the sexually transmitted diseases, and approaches to prevention and control. This course also explores issues raised by these diseases in fields of law, public health, economics and research.

185 Directed Study — Biology (1) †UC:CSU RPT 2

285 Directed Study — Biology (2) †UC:CSU

385 Directed Study — Biology (3) †UC:CSU

Prerequisite: A minimum of 3 units in Anatomy, Biology, Environmental Science 5, Microbiology or Physiology.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Biology on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Biology (1) CSU RPT 3

921 Cooperative Education — Biology (2) CSU RPT 3

931 Cooperative Education — Biology (3) CSU RPT 3

941 Cooperative Education — Biology (4) CSU RPT 3

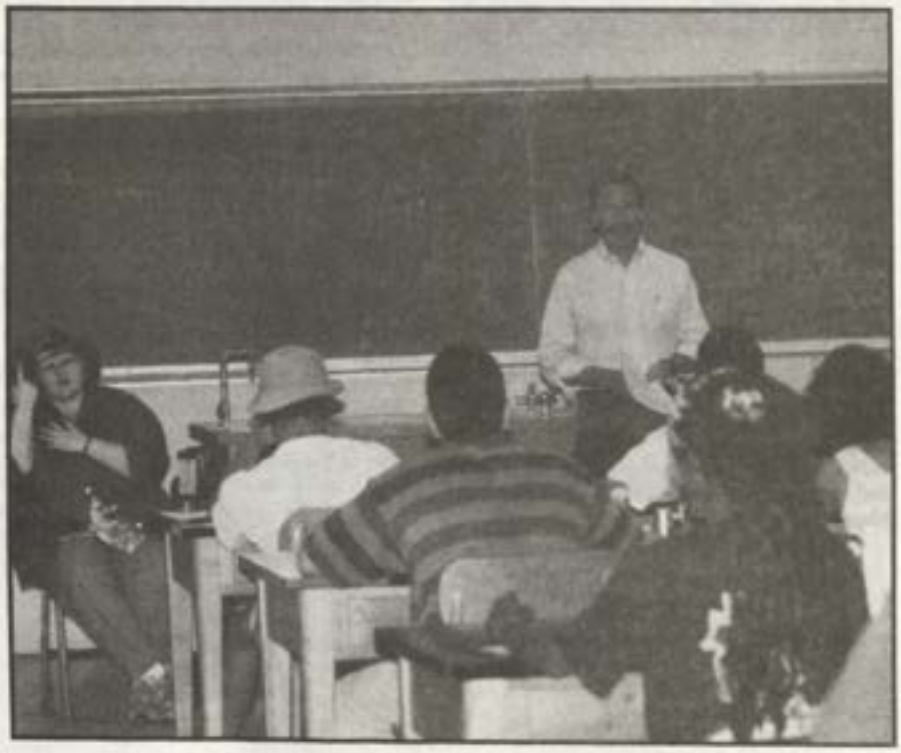
Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum one course.*

***UC Credit Limit: Maximum 3 units needed to transfer.*



†UC: See page 78.

BUSINESS

1 Introduction to Business (3) UC:CSU

Lecture 3 hours.
This course covers the various subject areas in the field of business. Topics covered include: Accounting, International Business, Finance, Marketing, Management, Business Law, Business Structure, and Careers.

5 Business Law I (3) *UC:CSU (CAN BUS 8)

Lecture 3 hours.
Includes a general overview of law and society and specifically the law of contracts, personal property and bailments, consumer protection, real property and the environment, estates and wills. Gives attention to logical reasoning and the application of rules of law to everyday business activities.

6 Business Law II (3) *UC:CSU

Lecture 3 hours.
Includes the study of agency and employment, sales, insurance, partnerships, corporations, commercial paper, bankruptcy, and the interrelationship of government and business. Discusses cases stressing the application of the principles of law in the above-named fields in order to apply the rules to everyday business activities.

38 Business Computations (3) CSU

Lecture 3 hours.
Reviews mathematics fundamentals as applicable to the business situation. Specifically goes into wage payment methods, payroll preparations, percentage, cash and trade discounts, mark-up, simple and compound interest, investments, annuity and amortization problems, installment purchases and other related business mathematics situations.

185 Directed Study — Business (1) CSU RPT 2

285 Directed Study — Business (2) CSU

385 Directed Study — Business (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Business on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Business (1) CSU RPT 3

921 Cooperative Education — Business (2) CSU RPT 3

931 Cooperative Education — Business (3) CSU RPT 3

941 Cooperative Education — Business (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum one course.*

BUSINESS ADMINISTRATION

Business Administration courses are listed separately under the following headings:

Accounting
Business
Escrow
Finance
Management
Marketing
Real Estate
Supervision

BUSINESS COMMUNICATIONS

(See course listings under Office Administration.)

BUSINESS EDUCATION

(See course listings under Office Administration.)

BUSINESS ENGLISH

(See course listings under Office Administration.)

CHEMISTRY

Qualification for or concurrent enrollment in English 28 is recommended for all students wishing to take any Chemistry course. Students whose native language is other than English must qualify for or be enrolled in ESL 85 before enrolling in Chemistry laboratory courses. Knowledge of and functional capability in written and spoken English are a determinant not only of a student's ability to profit from instruction offered, but also the safe and successful completion of chemistry laboratory courses.

45 Human and Environmental Chemistry (3) CSU

(Formerly Chemistry 24)

Prerequisite: None
Lecture 3 hours.
Designed for nonscience majors. Examines basic principles, applications to health and daily life, and societal, economic and environmental implications of chemistry. Covers such topics as nutrition, food additives, medicines, drugs, ozone hole, greenhouse effect, energy alternatives, pollution, household chemicals.

51 Fundamentals of Chemistry I (5) *¤UC:CSU (CAN CHEM 6)

(Formerly Chemistry 3)

Prerequisite: Mathematics 115 or one year of high school algebra.
Recommendation: Eligibility for English 28.
Lecture 3 hours; laboratory 4 hours.
Provides a basic introduction to chemistry for the student with no previous background in chemistry. Emphasizes the principles of inorganic chemistry and provides an introduction to elementary organic chemistry. It is intended for nursing, home economics, physical therapy, elementary education, animal health technology, terminal 2-year agriculture, and liberal arts students who need a one semester physical science laboratory course. For many students it is a terminal course in chemistry, but it serves also as the most appropriate prerequisite to Chemistry 70. It is not intended for students planning to take Chemistry 101.

60 Introduction to General Chemistry (5) *¤UC:CSU

(Formerly Chemistry 10)

Prerequisite: A minimum of 1 year of high school algebra or Mathematics 115 taken within the last two years with a grade of "C" or better.
Recommendation: Eligibility for English 28.
Lecture 3 hours; laboratory 4 hours.
Presents the elementary principles of general chemistry with special emphasis on problem solving and the development of a basic chemical vocabulary. It is an introductory course for science majors who have not taken high school chemistry or who need a refresher course. This course serves to prepare students for Chemistry 101.

70 Introductory Organic and Biochemistry (4) **UC:CSU

(Formerly Chemistry 9)

Prerequisite: Chemistry 51 or 60 with a grade of "C" or better.

Lecture 3 hours; laboratory 3 hours.

Introduces the student to the essential principles of organic chemistry, the chemistry of biological molecules, and the functioning of biological systems. It is especially suited to the needs of students majoring in nursing, home economics, physical therapy, and other health-related fields.

101 General Chemistry I (5) UC:CSU (CAN CHEM 2)

(Formerly Chemistry 1)

CHEMISTRY 101 READINESS TEST

The Chemistry 101 readiness test is necessary for students who wish to enroll in Chemistry 101 as their first course in Chemistry at Pierce College. Results from the test will be used to advise and assist students in enrolling in a class where they are most likely to succeed. The prerequisites for Chemistry 101 are not waived on the basis of any assessment test scores. Students without the appropriate prerequisites seeking authorization to enroll in Chemistry 101 must meet with the Department Advisor. Students who wish to enroll in Chemistry 40, 51, or 60 do not need to take this test. For an appointment contact the Assessment Center. Phone: 719-6499.

Prerequisite:

1. Chemistry 60 or equivalent with a grade of "C" or better within the last two years.

2. A minimum of two years of high school algebra, including the study of logarithms, or completion of Mathematics 125, or its equivalent. The above requirements must have been completed within the last two years.

Recommendation: Eligibility for English 101.

Lecture 3 hours; laboratory and discussion 6 hours.

Deals with the principles and laws of chemistry as related to the structure of matter. Topics covered include a comparison of the states of matter; atomic structure and the periodic table; stoichiometry; thermochemistry and introductory thermodynamics; chemical bonding; solutions; solubility; acids and bases; introductory chemical equilibrium; oxidation-reduction; and phase changes.

102 General Chemistry II (5) UC:CSU (CAN CHEM 4)

(Formerly Chemistry 2)

Prerequisite: Chemistry 101 with a grade of "C" or better, within the last two years.

Lecture 3 hours; laboratory and discussion 6 hours.

A continuation of Chemistry 101. Topics covered include a detailed study of chemical equilibrium as applied to analytical chemistry including solubility, complex ion, and redox equilibria, pH, buffers, weak acids, weak bases, monoprotic and polyprotic systems; thermodynamics; electrochemistry; the solid state; the relationship between structure and properties; kinetics; coordination chemistry including introduction to M. O. and ligand field theory; visible spectroscopy; and the chemistry of selected metals and nonmetals.

201 Quantitative Analysis I (4) UC:CSU (CAN CHEM 12)

(Formerly Chemistry 5)

Prerequisite: Chemistry 102 with a grade of "C" or better.

Recommended: Mathematics 227 or 261 and Physics 7 or equivalent.

Lecture 2 hours; laboratory 6 hours.

Covers the principles and techniques involved in gravimetric and volumetric analysis. Strong emphasis on instrumental methods, including spectroscopy. Provides an introduction to student research involving analytical chemistry. Recommended for majors in Physics, Biological Sciences, Pre-vet, Pre-med, Pre-pharmacy, Medical Technology, and Chemical Technology, Forensics and Criminology as well as Chemistry and Chemical Engineering.

Normally offered in the Spring semester only.

211 Organic Chemistry for Science Majors I(5) **UC:CSU

(Formerly Chemistry 14)

Prerequisite: Chemistry 102 with a grade of "C" or better.

Lecture 3 hours; laboratory 6 hours.

Introduces the student to the structure, nomenclature and properties of organic compounds as well as the mechanisms of organic reactions and syntheses. Laboratory deals with the techniques of preparation, isolation, and analysis of organic compounds employing modern instrumental methods.

Normally offered in the Fall semester only.

221 Biochemistry for Science Majors (5) **UC:CSU

(Formerly Chemistry 15)

Prerequisite: Chemistry 211 or equivalent with a grade of "C" or better.

Lecture 3 hours; laboratory 6 hours.

This course is intended as a preparation for careers in the physical and biological sciences, medical and dental professions, veterinary and agricultural science, nutrition and food chemistry, and related fields. Its objective is twofold. The first is to complete the study begun in Chemistry 211 of the organic function groups of aldehydes, ketones, enolates, carboxylic acids and their derivatives, and amines and their derivatives. The second is to provide a thorough introduction to the principles, concepts and terminology of biochemistry, with an emphasis on intermediary metabolism.

Normally offered in the Spring semester only.

185 Directed Study — Chemistry (1) †UC:CSU RPT 2

285 Directed Study — Chemistry (2) †UC:CSU

385 Directed Study — Chemistry (3) †UC:CSU

Conference 1 hour per unit. Allows students to pursue Directed Study in Chemistry on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Chemistry (1) CSU RPT 3

921 Cooperative Education — Chemistry (2) CSU RPT 3

931 Cooperative Education — Chemistry (3) CSU RPT 3

941 Cooperative Education — Chemistry (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum one course.*

***UC Credit Limit: Maximum two courses.*

¤*No credit if taken after Chemistry 101.*

CINEMA

3 History of Motion Pictures and Television (3) UC:CSU

Lecture 2 hours; laboratory 2 hours.

Examines television and film as communicative art forms. Analyzes representative films and television programs as to formats, aesthetics, societal impact, and evolution as entertainment media.

18 Main Currents in Motion Pictures (3) UC:CSU

Lecture 3 hours.

Presents a survey of feature film trends since World War II, utilizing a thematic approach which analyzes motion pictures as they reflect changing social values. Representative films are shown.

COMPUTER OFFICE APPLICATIONS

(See course listings under Office Administration.)

†UC: See page 78.

COMPUTER SCIENCE AND INFORMATION TECHNOLOGY

501 Introduction to Computers and Their Uses (3) CSU

Prerequisite: None
Lecture 3 hours.
An introduction to the uses, concepts, techniques, and terminology of computing. Places the possibilities and problems of computer use in historical, economic, and social contexts. Shows how computers can assist in a wide range of personal, commercial, and organizational activities. Provides familiarization with typical computer applications, which include word processor, spreadsheets, and databases, as well as programming.

504 Mathematics for Programmers (3) CSU

Prerequisite: Mathematics 115 or one year of high school algebra with a grade of "C" or better.
Lecture 3 hours.
Introduces elementary mathematical methods that apply to the programming of computers in such fields as business, engineering and mathematics. Includes number systems, sets, algebra review, and basic calculations as needed for business programming.

506 Beginning Pascal Programming (3) *UC:CSU (CAN CSCI 12)

Prerequisite: Mathematics 115 or one year of high school algebra and Computer Science 507 with a grade of "C" or better. Computer Science 507 may be taken concurrently.
Lecture 2 hours; laboratory 2 hours.
Introduction to computers and computer programming using PASCAL. Program structure, design, testing, and debugging are explored in a hands-on environment. Topics included are selection, repetition, data types, arrays, functions, procedures and file I/O.

507 Programming Logic (3) CSU

Prerequisite: Mathematics 115 or one year of high school algebra with a grade of "C" or better.
Recommended: Concurrent enrollment in Computer Science 506 or 508.
Lecture 3 hours.
This course introduces the concepts necessary to successfully design, code, test and document computer programs using top-down, structured programming techniques. Topics included are: data types, data structures, control structures, algorithm and subalgorithm structures and parameter passing methods, file structures and operations. This class is intended as a machine and language independent first course in computer science. It is required of all computer science majors and desirable for all students wishing to study programming. A high level language such as PASCAL or BASIC should be taken concurrently.

508 Beginning BASIC Programming (3) *UC:CSU (CAN CSCI 6)

Prerequisite: Computer Science 507 with grade of "C" or better or may be taken concurrently.
Lecture 2 hours; laboratory 2 hours.
Introduces the programming language BASIC as the host language to learn beginning to advanced structured programming concepts and techniques. Students are presented explicit instruction in structured programming principles, top-down design and modular programming methods, program debugging, testing, implementation and documentation procedures. Topics include data types, array and string structures, decision and repetition control structures, sequential and random file processing operations. Appropriate applications will be supplied to students as examples and exercises.

512 Beginning RPG Programming (3) CSU

Prerequisite: Students must have completed at least one of the following Computer Science classes: Computer Science 506, 508, 513, 515, or 533.
Lecture 2 hours; laboratory 2 hours.
Covers the basic principles and general concepts of programming and develops entry-level skill in the use of the RPG language including RPG II, RPG III and AS400 RPG. Is taught on Department's computer system. Includes hands-on programming in an interactive environment.

513 Beginning FORTRAN Programming (3) *UC:CSU (CAN CSCI 4)

Prerequisite: Computer Science 507 and Mathematics 261 with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Introduces the programming language FORTRAN as the host language for learning beginning through intermediate programming concepts and procedures. Structured and modular programming techniques will be utilized in all examples. Although FORTRAN is used in the public and private sectors to solve a wide variety of problems, applications for the fields of computer science, physical science and engineering will be stressed.

514 Computer Operations (3) CSU

Prerequisite: Computer Science 501 and 6 additional units of Computer Science Courses with a grade of "C" or better.
Lecture 3 hours.
The operation and management principles of a computer center are discussed. Included are the computer center organizational structure, goals and objectives, standards and procedures, workflow scheduling and controls, personnel and equipment acquisition, site selection and finance, and center performance evaluation. Operating and data communication systems guidelines are introduced and discussed.

515 Beginning COBOL Programming (3) *UC:CSU

Prerequisite: Computer Science 501 and 507 and one programming class from the following: Computer Science 506, 508, 513, 516; all with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Presents COBOL (Common Business Oriented Language), a language which facilitates the programming of business applications on computers. Students will learn to program in structured COBOL. Includes hands-on programming in an interactive environment.

516 Beginning Mainframe Assembly Language and Architecture(3) *UC:CSU

Prerequisite: Computer Science 507 and one programming class from the following: Computer Science 506 or 513, each with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Computer architecture. Internal organization and utilization of digital computers. Data representation and storage organization. Instructions, operations, and addressing modes. Programming examples and projects in VAX assembly language.

530 Microcomputer Application Software (3) CSU

Prerequisite: None.
Lecture 2 hours; laboratory 2 hours.
A survey of business application software packages including operating systems, word processing, spreadsheets, and database management. Examples include common business applications. Current software includes Wordperfect, Excel, dBASE III + and Windows.

532 Introduction to Data Bases (3) CSU

Prerequisite: Computer Science 536 with a grade of "C" or better.
Lecture 3 hours.
The organization of large files and databases is discussed. File structures are reviewed and analyzed. Sequential file updating, sorting and merging techniques are reviewed. Direct file processing using hashing methods are discussed. Indexed file processing with static and dynamic indexes are explored and multikey implementations are reviewed. The normalization process is defined. Database management systems architecture is reviewed. The hierarchical, network, and relational data models are discussed in depth. Database implementation requirements are identified. Query languages and distributed databases are reviewed. The role of the database administrator is discussed.

533 Microcomputer Data Base Programming (3) CSU

Prerequisite: Computer Science 530 with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
This course focuses on relational database management systems widely used by business to manage and use information for decision making. Presents capabilities of software commands, programming and systems design. Uses dBASE III + software and introduces SQL.

534 Operating Systems (3)*UC:CSU

Prerequisite: Computer Science 516 and 536 with a grade of "C" or better.
Lecture 3 hours.
An introduction to operating systems concepts, structure, functions, performance and management. Review of computer hardware, software and historical operating systems. The structure and command language interfaces are identified and discussed. Process control and management, scheduling methods, and interprocess communication techniques are presented. Memory management requirements and strategies are reviewed and critiqued. Data, device and file management structures are reviewed and allocation/scheduling algorithms are examined. System reliability, security, management and performance analysis are discussed.

535 Job Control Language and File Systems (3) CSU

Prerequisite: Computer Science 513 or 515, either of which may be taken concurrently.
Lecture 2 hours; laboratory 2 hours.
The concepts and usage of data storage systems, data representations, and methods of organizing, accessing, sorting and searching data are introduced and discussed. File systems architecture, organization, operations and processing are reviewed. Applications of these systems are highlighted and discussed. The operating systems activities that support file systems are reviewed. Language translator software is identified and explored. The use of job control languages for operating systems communication and program utilities for file operations are discussed and utilized through lab assignments.

536 Introduction to Data Structures (3) *UC:CSU

Prerequisite: Computer Science 506 and 507 with a grade of "C" or better.
Lecture 2 hours: laboratory 2 hours.
Uses PASCAL programming language as a vehicle to examine the data types and structures employed in application programming, compilers, file management, operating systems, and databases.

537 Teleprocessing Systems, Devices and Protocols (3) CSU

Prerequisite: Computer Science 501 and one of the following: Computer Science 506 or 508 or 513.
Lecture 3 hours.
Provides a comprehensive introduction to teleprocessing Systems, Devices and Protocols. Participants will learn how to analyze requirements and how to select hardware/software systems which will meet those requirements. The course will be especially valuable to the programmer and systems analyst who must define or implement teleprocessing systems.

539 Programming in C (3) *UC:CSU (CAN CSCI 16)

Prerequisite: Students should have completed at least one of the following Computer Science classes: Computer Science 513, 516, or 536
Lecture 2 hours; laboratory 2 hours.
This is a course in the programming language C. It covers data types, operators and expressions, control flow, functions and program structure, pointers and arrays, structures and I/O. Examples illustrate programming techniques, algorithms, and the use of library routines.

543 Advanced FORTRAN Programming (3) *UC:CSU

Prerequisite: Computer Science 513 and Mathematics 261 with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Gives the FORTRAN 77 programmer experience in writing quantitative application programs in the areas of engineering, mathematics and science. Includes a study of elementary numerical methods, simulation, file techniques and plotting.

Normally offered in the Spring semester.

545 Advanced COBOL Programming (3) *UC:CSU

Prerequisite: Computer Science 515 with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Presents a second course in COBOL programming concepts and file handling techniques. Includes tables, string handling, SORT and ISAM/VSAM files. Includes hands-on programming in an interactive environment.

546 Advanced Mainframe Assembly Language And Architecture (3) *UC:CSU

Prerequisite: Computer Science 516 and 536 both with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Introduction to the concept of microprogramming. The low level language translation process associated with assemblers. Discussion of input/output to include concepts of real time interrupt handling. Concept of relocatable loading and memory management. Discussion of multiple register processors and stack machines. Advanced addressability.

560 Business Systems Design (3) CSU

Prerequisite: Must have completed 12 units of Computer Science courses with grade of "C" or better.
Lecture 3 hours.
Examines the process of analysis, design, development and implementation of data processing systems as applied to business. Emphasizes project work on analysis and design of commonly used business data processing applications, including interviewing; system flow charting and decision tables; and procedure, code, form and file design.

570 Computer Fundamentals (3)

Prerequisite: One year of high school algebra or Mathematics 115 with a grade of "C" or better.
Lecture 2 hours; Laboratory 3 hours.
Provides student with necessary knowledge in mathematics, logic circuits and AC/DC electronics prerequisite to other courses in Computer Service Technology. In addition, hands-on computer applications software for math, logic and circuits presented in lab, along with test eqt.

572 Computer Systems and Networks I (3) CSU

Prerequisite: None.
Lecture 2 hours; Laboratory 2 hours.
Introduces the student to computer systems and networks. Topics range from system configurations, arrangements of floppy disks memory and printers etc. , required for various applications, through hardware and software installation and usage. Various Operating Systems and editors are studied and used in the laboratory. Single user and multiuser, multitasking operating systems and networks are studied and used (DOS, VAX/VMS and ETHERNET).

575 Programming Concepts for Computer Technicians (4) CSU

Prerequisite: Prerequisite or concurrent enrollment in Computer Science 570.
Lecture 3 hours; Laboratory 2 hours.
This course was designed to provide the programming knowledge required of technicians. It combines the aspects of generic programming with aspects of a high level programming language. Programming projects are oriented toward computer and electronic problem solving. Additionally, debugging and program trouble shooting techniques will be taught. Assembly language will be introduced.

577 Discrete and Micro Integrated Circuits (2) CSU

Prerequisite: Computer Science 570.
Lecture 1 hour, laboratory 3 hours.
This is an integrated course covering both discrete components such as diodes, bipolar transistors, JFETs, MOSFETs, etc. , and integrated circuits. Major emphasis is on the latter. This covers such topics as linear op-amps, wave shaping circuits, active filter, timers, A/D and D/A converters, etc. Extensive use is made of oscilloscopes, function generators and DMM's.

Normally offered in the Spring semester.

578 Microcomputers Architecture (3) CSU

Prerequisite: Computer Science 570 and 575 each with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
This is a first course in the application of digital logic blocks to the architecture of computers. The interaction and control of these blocks over address, data and control busses is studied in detail. A small dedicated microcomputer is designed, built, tested, debugged and run with a simple operating system and hardware test routines all of which are similar to but much smaller than those used in the real systems to be met later in the program. Experiments emphasize internal timing and real time programming in machine language.

Normally offered in the Spring semester.

580 Introduction to Computer Architecture (3) CSU

Prerequisite: Computer Science 570, 575, 578 all with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Introduces computer concepts, systems and architectures using a minicomputer. A computer 32 bit assembly language and instruction set will be studied in order to provide hands-on experience in addressing modes, formats, stack and subprogram operations, processor interrupts, microprogramming and other areas related to computer architecture and systems operation.

Normally offered in the Fall semester.

581 Computer Systems and Networks Repair (4) CSU

Prerequisite: Computer Science 572 with a grade of "C" or better or concurrent enrollment.
Lecture 2 hours; laboratory 4 hours.
The objective of this course is to teach the maintenance and repair of microcomputer systems and networks to the level required of a one-year certificate graduate. Topics will include software and hardware installation, maintenance and repair of floppy disks, printers, memory expanders, graphic terminals and network functional blocks and their various adapters. Manufacturers' manuals and diagnostic software are used for numerous service calls of increasing complexity involving electronics and mechanical failures and adjustments.

Normally offered in the Spring semester.

582 Microprocessor Assembly Language (3) CSU

Prerequisite: Computer Science 570. (It is recommended that Computer Science 578 be completed prior to enrollment.)
Lecture 2 hours; laboratory 2 hours.
Instructs the student in the assembly language of the 8 bit and 16 bit microprocessors. Major emphasis is on the 16 bit assembly language. Students write assembly source code on the PC using an editor, then utilize a macro assembler for using the object code. All major areas of coding are covered, including data transfer, arithmetic, jumps and loops, calls, subroutines and interrupts.

Normally offered in the Fall semester only.

583 Storage Principles and Devices (3) CSU

Prerequisite: Computer Science 577 and 578 with a grade of "C" or better.
Lecture 2 hours; laboratory 2 hours.
Theory and operation of bipolar, MOS, CCD, core and bubble memories are studied. Basic theory of analog and digital devices, circuits, and servo systems is applied to real storage equipment and schematics.

Normally offered in the Fall semester only.

585 Microprocessor Interfacing (3) CSU

Prerequisite: Computer Science 582.
Lecture 1 hour; laboratory 5 hours.
Studies interfacing techniques utilized between microprocessors and external devices. A short review of 8 bit techniques is followed with major emphasis on 16 bit interfacing. Some of the topics covered are interfacing the microprocessor with memory, I/O systems, communications and disk memory. Direct Memory Access (DMA)is also covered.

Normally offered in the Spring semester.

586 Computer Systems II (4) CSU

Prerequisite: Computer Science 580 and 581 with a grade of "C" or better.
Lecture 2 hours; laboratory 5 hours.
Teaches installation, evaluation, backup strategies, maintenance and repair of microcomputers, work stations and minicomputers on real equipment using manufacturers' manuals and schematics. Teaches the use of privileged utilities on the VMS (VAX) and RSTS (PDP II) operating systems for error logging, diagnostics and updating found in all sizes of computers in those families. Installation, backup, and updating labs will be included.

Normally offered in the Spring semester.

587 Introduction to Local Area Networks (4) CSU

Prerequisite: Computer Science 570, 572, 575 or equivalent.
Lecture 2 hours; laboratory 4 hours.
Introduces the hardware and software that form a local area network. Emphasis is placed on design, implementation, operation and maintenance of computer network systems. Hands-on experience is provided in each of these areas in order to introduce concepts of distributed technologies and provide experience in component installation, management and troubleshooting.

Normally offered in the Spring semester.

588 Computer Projects (2) CSU

Prerequisite: Computer Science 577 and 578 with a grade of "C" or better.
Lecture 1 hour; laboratory 3 hours.
Requires the student, after consultation with the instructor, to design, build, evaluate and document a project involving digital electronics. Professional approaches toward funding a real project as either an employee or contractor are discussed along with cost estimating, scheduling and documenting.

589 Introduction to Data Communications (3) CSU

Computer Science 577, 581
Lecture 2 hours; laboratory 2 hours.
Studies the different techniques used to achieve the transfer of data between two devices. The course covers interface protocols, error detectors and correction and the OSI international standard protocols.

185 Directed Study — Computer Science Information Technology (1) †UC:CSU RPT 2

285 Directed Study — Computer Science Information Technology (2) †UC:CSU

385 Directed Study — Computer Science Information Technology (3) †UC:CSU

Prerequisite: None.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Computer Science on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Computer Science Information Technology (1) CSU RPT 3

921 Cooperative Education — Computer Science Information Technology (2) CSU RPT 3

931 Cooperative Education — Computer Science Information Technology (3) CSU RPT 3

941 Cooperative Education — Computer Science Information Technology (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum six courses.*

†UC: See page 78.

COOPERATIVE EDUCATION

The following courses provide Cooperative Work Experience Education credit. See Cooperative Work Experience Education in the Education Programs section of this catalog.

Cooperative Education — Occupational

Cooperative Education is offered in the subjects listed below. Please see courses 911-941 under the appropriate subject heading.

Agriculture	Industrial Technology-General
Architecture	Journalism
Art	Music
Automotive Service Technology	Nursing
Biology	OfficeAdministration
Business	Photography
Chemistry	Physical Education
Computer Science	Physics
Economics	Political Science
Education	Psychology
Electronics	Recreation
Engineering-General	Sociology
English	Speech Communication
Health	Theater

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's education goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

Cooperative Education — General

195 Work Experience — General I (1) RPT 1

295 Work Experience — General I (2) RPT 1

395 Work Experience — General I (3) RPT 1

Prerequisite: None.

Supervised training is provided in the area of general employment practices with emphasis on attitude, ethics, and integrity. On-the-job training need not be in the college major but must be educational.

DESKTOP PUBLISHING

(See course listings under Office Administration)

DEVELOPMENTAL COMMUNICATIONS

20X Fundamentals of Communication (3) (NDA) RPT 1

Prerequisite: Satisfactory performance on the English Placement Test or the ESL Test.

Helps develop adequate communication skills, sight vocabulary, reading comprehension, and word-attack skills. Provides opportunity for acquiring study skills and increasing speed and efficiency in reading. Designed for students with major difficulties in reading basic materials.

22 Communications Laboratory (5) (NDA) RPT 2

Prerequisite: Satisfactory performance on the English Placement Test or the ESL Test.

Lecture 5 hours.

Provides students with the opportunity to improve academic skills. It is recommended for students with deficiencies in specific areas such as reading, spelling, vocabulary, grammar, language skills and study skills. It provides individualized tutoring and programmed media instruction as prescribed.

DRAFTING — MECHANICAL

(See Industrial Technology - Drafting)

EARTH SCIENCE

Earth Science courses are listed under the headings of:

Anthropology
Environmental Science
Geography
Geology
Linguistics
Meteorology
Oceanography

ECONOMICS

1 Principles of Economics I (3) UC:CSU (CAN ECON 4)

Recommendeded as the second course in Economics.

Lecture 3 hours.

Presents microeconomics, introducing the principles and methods of economic analysis, economic institutions, and issues of economic policy. Emphasizes the fundamentals of the price system and the distribution of income.

2 Principles of Economics II (3) UC:CSU (CAN ECON 2)

Recommendeded as the first course in Economics.

Lecture 3 hours.

Presents macroeconomics, emphasizing aggregative economic analysis, including money and banking, national income determination and public finance.

10 Economic History of the United States (3) UC:CSU

(Same as History 15. Credit not given for both courses.)

Lecture 3 hours.

Stresses development and change in economic institutions. Considers the nature of American capitalism and the effects of industrialization on American economic life.

185 Directed Study — Economics (1) †UC:CSU RPT 2

285 Directed Study — Economics (2) †UC:CSU

385 Directed Study — Economics (3) †UC:CSU

Conference 1 hour per unit.

Allows students to pursue Directed Study in Economics on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Economics (1) CSU RPT 3

921 Cooperative Education — Economics (2) CSU RPT 3

931 Cooperative Education — Economics (3) CSU RPT 3

941 Cooperative Education — Economics (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

EDUCATION

1 Introduction to Teaching (3) CSU

NOTE: Not open to students with credit in Education 2 or 3.

Lecture 3 hours.

This is a pre-professional course intended for students considering a teaching career. Presents the issues and problems involved at all levels of American education. Includes such areas as the historical, social, philosophical and psychological foundations and organization of education, and examines the contributions of teachers to the profession, to students, and to the community.

†UC: See page 78.

911 Cooperative Education — Education (1) CSU RPT 3

921 Cooperative Education — Education (2) CSU RPT 3

931 Cooperative Education — Education (3) CSU RPT 3

941 Cooperative Education — Education (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

ELECTRICAL CONSTRUCTION AND MAINTENANCE

(See Industrial Technology)

ELECTRICITY

(See Industrial Technology)

ELECTRONICS

2 Introduction to Electronics (3) CSU

Lecture 3 hours.
Presents an overview of electronics and provides a general consumer understanding for the non-technical student. Emphasis is on the relationship of this field to other scientific fields, industry, business, the home, and other users. The course will include lectures, demonstrations, films. This course is designed for students not majoring in Electronics.

4A Fundamentals of Electronics IA (3) CSU

Prerequisite: Concurrent enrollment in Electronics 4B.
Lecture 3 hours.
Designed for beginning electronics students without any previous experience with electricity or electronics. Covers fundamentals of atomic theory, basics of volt, OHM, ampere, energy and power, OHM's Law, resistive networks, application of Kirchoff's laws, Thevenin's and Norton's Theory, conductors, resistors, batteries, magnetism, electromagnetic induction, transient functions, and measuring instruments. Introduction to computer aided circuit analysis.

4B Fundamentals of Electronics IB (1) CSU

Prerequisite: Concurrent enrollment in Electronics 4A.
Laboratory 3 hours.
Covers experimentation in basic concepts of OHM's Law, wiring practice from schematic to pictorial, use of laboratory instruments, construction of Volt-OHM-Milliammeter. Includes practice in transient response of L/R and RC circuits, as applied to timing circuits and delay circuits.

6A Fundamentals of Electronics IIA (3) CSU

Prerequisite: Electronics 4A and 4B, Electronics 10 and concurrent enrollment in Electronics 6B.
Lecture 3 hours.
Studies in detail alternating current theory and applications. Stresses the topics of reactance, impedance, resonance, transformers, coupling filters, and bandpass. Emphasizes the solution of alternating current circuit problems.

6B Fundamentals of Electronics IIB (1) CSU

Prerequisite: Concurrent enrollment in Electronics 6A.
Laboratory 3 hours.
Covers practical application of theories presented in Electronics 6A through laboratory experimentation.

8A Electron Devices A (3) CSU

Prerequisite: Electronics 4A and 4B.
Lecture 3 hours.
Presents principles of operation of semi-conductor, diodes, bipolar transistors, fets, mosfets, and special purpose electron devices, such as SCRs, tunnel diodes, 4-layer devices, Zener devices, vacuum tubes, cathode ray tubes, color TV picture tubes. Provides analysis of all basic solid state device circuits.

8B Electron Devices B (1) CSU

Prerequisite: Electronics 8A or concurrent enrollment in Electronics 8A.
Laboratory 3 hours.
Provides laboratory experience in use of electron devices and associated test equipment including transistor curve tracer.

10 Mathematics of Electronics I (3) CSU

Lecture 3 hours.
Presents principles of basic algebra, equations, factoring, fractional equations, solutions to systems of equations, basic logarithms, power of ten, and basic units of electronics. Emphasis on solutions of problems as applied to electronics. Requires an electronic calculator.

12 Mathematics of Electronics II (3) CSU

Prerequisite: Electronics 10, with grade of "C" or better.
Lecture 3 hours.
Presents principles of trigonometry, vectors, logarithms, theory of steady state alternating current circuits. Emphasis on solutions of electronics problems. Requires an electronic calculator.

14 Mathematics of Electronics III (3) CSU

Prerequisite: Electronics 12.
Lecture 3 hours.
Presents an applied course in analytic geometry and calculus with emphasis on electronic problems. Covers functions, average rate notations, fundamental derivatives and integrals. Includes practical applications of differentiation, integration of trigonometric, logarithmic and exponential functions.

26 Linear Circuits (3) CSU

Prerequisite: Electronics 8, and concurrent enrollment in Electronics 27 or 63.
Lecture 3 hours.
Covers power supplies, AC and DC amplifiers, push-pull amplifiers, complementary symmetry, phase inverters and phase splitters. Analysis of distortion in amplifiers. Covers A, B, and C amplifiers and oscillators, AM and FM modulation and detection, solid state radio receiver circuit analysis, alignment, and trouble shooting.

27 Linear Circuits Laboratory (2) CSU

Prerequisite: Concurrent enrollment in Electronics 26.
Note: Equivalent to Electronics 63.
Laboratory 6 hours.
Provides laboratory experience with power supplies, AC and DC amplifiers, push pull amplifiers, complementary symmetry. Class A, B, and C amplifiers and cascaded amplifiers are constructed and tested. Construction techniques, troubleshooting methods, and introductory analysis of a basic AM and FM radio.

28 Electronic and Electro-Mechanical Drafting I (2) CSU

Lecture 1 hour; laboratory 2 hours.
Covers techniques of lettering, signs, and symbols as applied to electronics. Includes wiring diagrams, printed circuits, pictorials such as diametrics, obliques, and isometric presentations and packaging techniques. Component layout, highway and airline-type diagrams and perspective are also included.

44 Communications Electronics (3)

Prerequisite: Electronics 6 and 8.
Lecture 3 hours.
Provides a study of AM, FM and SSB transmitters and receivers. Crystal, ceramic and LC filtering. Oscillators, modulators, mixers, discriminators, and RF amplifiers. Frequency multipliers, limiters, and antennas. Audio and squelch circuits. Introduction to video systems. Implementation of phase locked loops in detectors, frequency synthesizers and FSK receivers. Dual gate MOSFETS, varactors, and integrated devices in RF circuitry. Introduction to digital communications modems, FSK, and frequency domain analysis. Discussion of the requirements for obtaining a Radio Telephone Operator License.

45 Communications Electronics Laboratory (1)

Prerequisite: Electronics 44, concurrent enrollment.
Laboratory 3 hours.
Provides laboratory experience for Electronics 44.

48 Integrated Circuits (4) CSU

Prerequisite: Electronics 26 and 27, 63.
Lecture 3 hours; laboratory 3 hours.
Covers theory and interface of linear and linear/digital interface integrated circuits. DC basic circuits, input/output resistance, drift, input offset/bias current, models, CMRR, open and closed loop gains and frequency response are covered. Application to differential, operational and video amplifiers. Covers voltage regulators, MOS interface, peripheral driver,line transmission circuits, and phase lock loop circuits.

60 Microwave Fundamentals (3)

Prerequisite: Electronics 6 and 8.
Lecture 3 hours.
Includes discussions of microwave applications and frequency bands. Transmission line principles and characteristics. Use of Smith chart in solving transmission line problems. Matching load to transmission line, VSWR and reflection coefficients, stubs and tuners. Microwave generators and amplifiers including gunn, klystron, travelling wave tubes, and magnetrons. Microwave components: waveguides and operating modes, slotted lines, directional couplers, and power sensors.

61 Microwave Fundamentals Laboratory (1)

Prerequisite: Electronics 60 or concurrent enrollment.
Laboratory 3 hours.
Provides practical experience using modern measuring instruments including VSWR and power meters, spectrum analyzers, swept frequency systems and plotters. Experiments demonstrate electromagnetic wave theory and measurement techniques to determine VSWR, reflection coefficient, load impedance, power, frequency and attenuation. Use of time domain reflectometry in analyzing transmission line faults.

63 Circuit Analysis Laboratory (1)

Prerequisite: Concurrent enrollment in Electronics 26.
Laboratory 3 hours.
Provides laboratory experience with power supplies, AC and DC amplifiers, push pull amplifiers, complementary symmetry. Class A, B, and C amplifiers and cascaded amplifiers are constructed and tested. Construction techniques, troubleshooting methods, and introductory analysis of a basic AM and FM radio.

72A Digital Circuits IA (3) CSU

Prerequisite: Electronics 6 and 8.
Co-requisite: Electronics 72B
Lecture 3 hours.
Presents principles of digital electronics and computer technology. Provides coverage of digital number systems, boolean algebra and simplification techniques including Karnaugh maps. Logic gates and the design of logic systems including adders and subtractors, encoders and decoders, code converters, comparators, multiplexers, drivers and displays, decade counting units, gate arrays and programmable logic devices are presented. The operation of multivibrators, and their applications to counters, registers, timers, and clock generators are discussed. RAM, ROM, EPROM, EEPROM, and other memories and memory organization are studied. Three state devices and introduction to buss organization. Introduction to synchronous sequential design and computer aided circuit design.

72B Digital Circuits IB (1) CSU

Co-requisite: Electronics 72A
Laboratory 3 hours.
Provides practice in breadboarding and troubleshooting digital circuits using TTL integrated circuits. The circuits that are constructed and tested include logic gates, flip-flops, memories, counters, registers, and digital displays. Emphasis is placed on using manufacturers data sheets.

74A Digital Circuits IIA (3) CSU

Prerequisite: Electronics 72A and B.
Lecture 3 hours.
A comprehensive study of a representative microprocessor, with an emphasis on the internal architecture, instruction set, and support chips. The fundamentals of micro and macro programming are covered. Input and output control and interfacing with a study of hardware and machine language programming techniques. Many programming examples and control applications are discussed. A/D and D/A conversion, memory address decoding, buss organization, and timing are also covered.

74B Digital Circuits IIB (1) CSU

Co-requisite: Electronics 72A
Laboratory 3 hours.
Machine and assembly language programming techniques are studied using a representative microprocessor. Data manipulation and arithmetic operations, timing, keyboard and display control, input and output port control, and hardware interfacing are performed in the laboratory. Analog to digital and digital to analog conversion and other instrument interfacing techniques are attempted.

81 Projects Laboratory (1) RPT 3

Laboratory 3 hours.
Requires the student, after consultation with the instructor, to design, assemble, and determine the characteristics of a project involving electronic systems. Includes such typical projects as hi-fi amplifiers, ham transmitters, FM tuners, test equipment, and communications equipment. Requires the student to write a report covering the characteristics, theory, repair, and operation of the project and do all research without direct supervision. All materials are supplied by the student. No lab fee is required.

185 Directed Study — Electronics (1) RPT 2

285 Directed Study — Electronics (2)

385 Directed Study — Electronics (3)

Conference 1 hour per unit.
Allows students to pursue Directed Study in Electronics on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Electronics (1) CSU RPT 3

921 Cooperative Education — Electronics (2) CSU RPT 3

931 Cooperative Education — Electronics (3) CSU RPT 3

941 Cooperative Education — Electronics (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

ENGINEERING, ELECTRICAL

220 Electrical Circuits I (4) *UC:CSU

Prerequisite: Physics 38 and Mathematics 263.
Corequisite: Mathematics 275.
Lecture 3 hours; laboratory 2 hours; recitation 1 hour.
Introduction to the calculus based theory and application of DC and AC electrical circuits, operational amplifiers, power energy, impedance, phasors, and frequency response.

**UC Credit Limit: Combined with Engineering General courses, 16 units total.*

ENGINEERING, GENERAL

Note: Engineering students see Physics 37, 38, 39 Notes.

5 Materials of Engineering (3) *UC:CSU (CAN ENGR 4)

Prerequisite: Chemistry 101, Mathematics 262, and Physics 37.
Lecture 2 hours; laboratory 3 hours.
Involves study of the internal structures of materials and the dependence of properties upon these structures.

101 Introduction to Science, Engineering and Technology (2) *UC:CSU

(Formerly Engineering General 1)
Lecture 2 hours.
Acquaints beginning students of science, engineering and technology with the various opportunities in the disciplines. Emphasis will be placed on expertise drawn from industry and academe, presenting lectures on duties, opportunities and preparation required in the various disciplines.

111 Introduction to Engineering Drafting (3) *UC:CSU

(Formerly Engineering General 2)
Lecture 1 hour; laboratory 5 hours.
Deals with basic instruction in engineering drafting techniques and equipment; geometric constructions for drafting; basic principles and practices of isometric and multiview drawing systems. Includes problems in mechanical engineering drafting.

UC Credit Limit: Engineering General 111 and 113 maximum one course.

112 Engineering Descriptive Geometry (3) *UC:CSU

(Formerly Engineering General 4)

Prerequisite: Industrial Technology 112 or Engineering General 111 or equivalent.
Lecture 1 hour; laboratory 5 hours.
Provides training in the analysis and solution of orthographic projection problems. Emphasis is placed on solving three-dimensional space problems by exposure to and interpretation of points, lines, and planes in primary, secondary, and successive auxiliary views. Theory and practice are included that involve visualization and graphic representation of intersections, angles, parallelism, perpendicularity, and revolutions. Orthographic and pictorial abstract examples are taken from engineering disciplines related to design and industrial technology.

113 Engineering Drawing Systems (3) *UC:CSU

(Formerly Engineering General 3)

Prerequisite: Engineering General 2 with grade "C" or better or Industrial Technology 112.
Lecture 1 hour; laboratory 5 hours.
Continues Engineering General 2 in advanced multiview and pictorial drawing. Provides experience in auxiliary projection and introduces some basic concepts of descriptive geometry. Includes comprehensive coverage of sectional view, mechanical perspectives and practical application to detail and assembly drawing. Problems are chosen to fit students' engineering or technical field of interest.

UC Credit Limit: Engineering General 111 and 113 maximum one course.

131 Statics (3) *¤UC:CSU

(Formerly Engineering General 7)

Prerequisite: Mathematics 262 and Physics 37.
Lecture 2 hours; laboratory 3 hours.
Examines force systems and equilibrium conditions with emphasis on engineering problems involving structures, machines, distributed forces and friction.

161 Processing of Engineering Materials (3) *UC:CSU

(Formerly Engineering General 6)
Lecture 2 hours; laboratory 3 hours.
Introduces materials and processes relating to design, materials, and construction techniques.

241 Strength of Materials (3) *¤UC:CSU

(Formerly Engineering General 8)

Prerequisite: Engineering General 7 Statics.
Lecture 2 hours; laboratory 3 hours.
Concerned with the physical properties of engineering materials. Studies the relationships between external loads and the stresses and strains induced in structural elements for the purpose of developing design criteria.

243 Statics and Strength of Materials (4) *¤UC:CSU

(Formerly Engineering General 9)

Prerequisite: Mathematics 262 and Physics 37.
Lecture 3 hours; laboratory 3 hours.
Examines force systems and equilibrium conditions with emphasis on engineering problems involving structures, machines, distributed forces and friction. Vector and scalar methods are used. Studies the relationships between external loads and the stresses they induce in elementary structural elements for the purpose of developing design formulae. Methods of determining deflections in beams and some elementary statically indeterminate problems are also studied.

911 Cooperative Education Engineering, General (1) CSU RPT 3

921 Cooperative Education Engineering, General (2) CSU RPT 3

931 Cooperative Education Engineering, General (3) CSU RPT 3

941 Cooperative Education Engineering, General (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Combined with Engineering Electrical course, 16 units total.*

¤*UC Credit Limit: Maximum credit 6 units (within 16 unit limit).*

ENGINEERING TECHNOLOGY, GENERAL

156 Metallurgical Materials and Practices (3)

(Formerly Engineering General 30)
Lecture 3 hours.
Presents a theoretical and practical approach to the concepts and principles of behavior common to most metals. Examines thoroughly the properties and heat treatment of steel, as well as properties and application of some non-ferrous metal. Considers phases of the manufacturing processes as they affect the metallurgical structure.

ENGLISH

The results of the English Placement Test or a valid English Enrollment Authorization Form must be presented at registration or included in the mail-in registration packet in order to enroll in English 21, 28 or 101, English 82, 84-87, or Developmental Communications 20 or 22.

All students planning to enroll in an English course for the first time are expected to the English Placement Test at the Pierce College Assessment Center (BUNG 0350). Contact the Assessment Center at (818) 719-6499 for an appointment and sample test information. Placement results or prerequisite courses taken at other colleges may be presented to the Assessment Center to be substituted for the Pierce English Placement test.

Placement recommendations made by the English Placement Test are advisory and intended to assist students with enrolling in classes where they are most likely to succeed. Upon completing the test, students are advised of their recommended placement and given their authorization to enroll. Students seeking authorization to enroll in a course other than that recommended by the assessment test must meet with the English department advisor.

Students currently or previously completing an English course at Pierce with a grade of "C" or better will be issued an Enrollment Authorization Form by the instructor.

English Writing Laboratory

Open to any regularly enrolled student in Pierce College.

21 English Fundamentals (3) (NDA)

Prerequisite: Completion of Developmental Communications 20 with an instructor's recommendation, or completion of English 87 with a grade of "C" or better, or equivalent skills as demonstrated by a satisfactory score on the English Placement Test or ESL Test, test scores from another college, or a prerequisite course completed at another college.

Lecture 3 hours.

Emphasizes improvement of writing, particularly sentences and paragraphs, and supplements and reinforces basic communication skills including punctuation, spelling and sentence structure. Develops ability to read analytically and think logically.

22 Technical English (3)

Prerequisite: Eligibility for English 21 or higher.

Lecture 3 hours.

Includes training for students in the technical and industrial fields in writing, reading, listening, and speaking, with emphasis on the writing of technical reports, directives, memoranda, specifications. Includes preparation and presentation of oral reports and preparation of an occupational resume.

23 Advanced Vocabulary (3) (NDA)

Lecture 3 hours.

Teaches techniques of enlarging and enriching the individual's vocabulary. Includes a study of the history of language and a survey of the varied elements, including those of Greek and Latin, which make up the English language. Includes the study of semantics.

28 Intermediate Reading and Composition (3)

Partially satisfies reading and composition competency requirements for AA degree.

Prerequisite: Completion of English 21 with a grade of "C" or better, or completion of English 87 with an instructor's recommendation, or equivalent skills as demonstrated by a satisfactory score on the English Placement Test or ESL Test, test scores from another college, or a prerequisite course completed at another college.

Lecture 3 hours.

Introduces the student to the elements of composition and critical reading. Designed to assist the student to make a successful transition to English 101. Emphasizes grammar, sentence structure, paragraph and essay writing.

32 College Literary Magazine Editing (2) RPT 3

Lecture 2 hours.

This course studies the ways to process poetry and prose submitted to the editor of the literary magazine (Direction), including critical evaluation of short stories and poetry, rewriting, editing, and copy reading. In addition, it includes printshop experience doing makeup and proofreading, study and evaluation of other college literary magazines, and training in magazine promotion and sales.

33 Basic Vocabulary (3) (NDA)

Prerequisite: Completion of Developmental Communications 20 or placement in English 21 or 86.

Lecture 3 hours.

Enlarges and enriches the student's vocabulary through a systematic study of word meanings, structure and origins. Introduces the study of semantics. Develops spelling ability. Teaches the use of dictionaries and other tools for building vocabulary.

82 Introduction to College English as a Second Language (5) (NDA)

Prerequisite: Completion of Developmental Communication 22 with a grade of "C" or appropriate placement on ESL Test.

Lecture 5 hours.

Intended for students whose native tongue is not English. Introduces students to English pronunciation patterns, basic sentence patterns, and elementary communication skills. Emphasizes reading improvement for comprehension, developing a sight vocabulary, and learning word-attack skills.

83 College Conversational English as a Second Language (3) (NDA) RPT 1

Prerequisite: Appropriate placement on ESL Test.

Lecture 3 hours.

Intended for students whose native tongue is not English. Emphasizes basic language acquisition skills, including intonation patterns, American idioms, sentence patterns, grammar as check for language correctness. Also included are listening skills, reading for vocabulary and comprehension, and guided writing.

84 College English as a Second Language I (5) (NDA)

Prerequisite: Appropriate placement on ESL Test.

Lecture 5 hours.

Intended for students whose native tongue is not English. An intensive multi-skills course emphasizing basic aspects of English grammar, punctuation, spelling, sentence structure. Includes speaking and listening skills, reading for vocabulary and comprehension, and guided writing.

85 College English as a Second Language II (5) CSU

Prerequisite: Appropriate placement on ESL Test, or completion of English 84 with a grade of "C" or better.

Lecture 5 hours.

For students whose native tongue is not English. Includes drill in the construction of sentences and their word order, grammar, idioms, punctuation, capitalization, vocabulary, and spelling. Also includes reading for comprehension and practice in paragraph writing.

86 College English as a Second Language III (5) UC:CSU

Prerequisite: Appropriate placement on ESL Test, or completion of English 85 with a grade of "C" or better.

Lecture 5 hours.

For students whose native tongue is not English. Continues to work on the fundamentals of English as a second language. Places emphasis on writing, syntax, and reading.

87 Advanced ESL: Reading and Vocabulary (3) CSU

Prerequisite: Appropriate placement on ESL Test, or completion of English 86 with grade of "C" or better.

Lecture 3 hours.

A reading skills course designed for advanced ESL students. Includes reading for comprehension, skimming, scanning techniques, as well as exercises in critical reading and non-prose reading. Will improve vocabulary through various word study exercises.

101 College Reading and Composition I (3) UC:CSU (CAN ENGL 2)

Prerequisite: Completion of English 28 with a "C" or better, or equivalent skills as demonstrated by a satisfactory score on the English Placement test, test scores from another college, or a prerequisite course completed at another college.
Lecture 3 hours.
Develops proficiency in reading and writing through application of the principles of rhetoric and the techniques of critical thinking. Prerequisite is an understanding of the elements of grammar, punctuation, and sentence structure. Required for English majors.

102 College Reading and Composition II (3) UC:CSU (CAN ENGL 4)

Prerequisite: English 101 with a grade of "C" or better.
Lecture 3 hours.
Introduces types of literature. Concentrates on reading for enjoyment, appreciation, and the development of critical judgment. Emphasizes written analysis of short stories, poetry, novels, and drama. Required for English majors.

(See also Humanities 11, 12, 13, 14.)

103 Composition and Critical Thinking (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better.
Lecture 3 hours.
A course specifically designed to deal with the issues of critical thinking and written expression. It builds on the reading and writing skills developed in English 101. Papers of greater length and depth are required.

127 Creative Writing (3) **UC:CSU RPT 3

Prerequisite: English 101 with a grade of "C" or better.
Lecture 3 hours.
Presents a workshop in creative writing. Class and instructor informally discuss and criticize students' plays, poems, short stories, and essays. Encourages student participation in campus literary publication.

203 World Literature I (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Introduces the great books of the world from Homer to the Renaissance.

204 World Literature II (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Continues the study of English 203, presenting great books of the world from the Renaissance to recent times. English 203 is not a prerequisite.

205 English Literature I (3) UC:CSU (CAN ENGL 8)

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Surveys English literature from the Anglo-Saxon period through the 18th century. Required for English majors.

206 English Literature II (3) UC:CSU (CAN ENGL 10)

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Continues the study of English 205, covering English literature from the 18th century to the 20th century. English 205 is not a prerequisite. Required for English majors.

207 American Literature I (3) UC:CSU (CAN ENGL 14)

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Surveys American literature from its beginning to 1860.

208 American Literature II (3) UC:CSU (CAN ENGL 16)

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Continues the study of English 207, covering American literature from 1860 to the 20th century. English 207 is not a prerequisite.

209 California Literature (3) UC:CSU

Prerequisite: English 28.
Lecture 3 hours.
The course presents selected works by writers observing California life. Readings from sources as varied as Native-American legends and Hollywood memoirs will demonstrate such aspects of the study of literature as plot and structure, character, point of view, figurative discourse.

211 Fiction (3) *UC:CSU RPT 1 (CAN ENGL 18)

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Emphasizes selected great novels and short stories from French, German, Russian, English, American, and Spanish literature.

212 Poetry (3) *UC:CSU RPT 1

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Emphasizes reading, discussion and analysis of selected poems. Designed to increase the student's understanding and appreciation of all forms of poetry.

213 Dramatic Literature (3) UC:CSU

(Same as Theater 125. Credit not given for both courses.)

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Surveys dramatic literature from the beginnings to the present day with emphasis on the works of the major playwrights, such as Sophocles, Shakespeare, Moliere, Shaw, Ibsen, O'Neill, and Williams.

214 Contemporary Literature (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Concentrates on significant literature since 1920, primarily American and British. Includes lectures and discussions, oral and written reports. Emphasis is placed upon critical analysis of short story, novel, drama, and poetry.

215 Shakespeare I (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Introduces the life and works of William Shakespeare, with emphasis on Shakespeare's milieu. Emphasizes detailed study of several history plays, earlier comedies and tragedies.

216 Shakespeare II (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.) May be taken before English 215.
Lecture 3 hours.
Concentrates on the later comedies and tragedies, beginning with the problem comedies, and proceeding through major tragedies.

218 Children's Literature (3) CSU

Prerequisite: English 101 with a grade of "C" or better.
Lecture 3 hours.
A survey of literature suitable for children of different age levels. Emphasis will be placed on story telling, acquaintance with authors and the development in children of desirable attitudes toward literature. Recommended for prospective nursery, kindergarten, elementary and secondary teachers. Parents will find the course helpful in discovering what reading material is available.

219 Literature of American Ethnic Groups (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better.
Lecture 3 hours.
A study of the literature of American ethnic writers: stories, novels, plays, poems, essays, and other non-fiction prose works. Works are examined in the context of traditional and contemporary problems of American ethnic groups, each of which offers a unique contribution to American society.

239 Women in Literature (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Focuses on major plays and works of fiction from ancient times to the present which make women their central characters. This course considers the reflection of women's changing status given by the great writers.

240 Literature and the Motion Picture I (3) ¤UC:CSU

Prerequisite: English 101 with a grade of "C" or better.
Lecture 3 hours.
Examines the comparative arts of literature and the motion picture. Includes readings of literary classics, screenings of film classics based upon these literary sources, discussion, and writing of several critical papers.

241 Literature and the Motion Picture II (3) ¤UC:CSU

Prerequisite: English 101 with a grade of "C" or better.
Lecture 3 hours.
Continues the examination of the comparative arts of literature and the motion picture. Includes readings of literary classics, screenings of film classics based upon these literary sources, discussion, and writing of critical papers. Uses different materials than English 240. May be taken before English 240.

250 Mythology and Literature (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Introduces the mythology of Western and Near-Eastern civilizations, broadened to include such other elements of folk tale as marchen, fairy tale legend, etiological tale, fable, myth, and motif.

252 The English Bible as Literature (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended.)
Lecture 3 hours.
A study of the Bible with the Oxford Annotated Revised Standard Version with the Apocrypha as the basic Text.

270 Science Fiction (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better. (English 102 recommended but not required.)
Lecture 3 hours.
Presents science fiction as literature, with emphasis on the use of mythology, science fiction by scientists and nonscientists, political and philosophical oriented science fiction, and science fiction as fantasy and escape literature.

185 Directed Study — English (1) †UC:CSU RPT 2

285 Directed Study — English (2) †UC:CSU

385 Directed Study — English (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in English on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — English (1) CSU RPT 3

921 Cooperative Education — English (2) CSU RPT 3

931 Cooperative Education — English (3) CSU RPT 3

941 Cooperative Education — English (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum one course.*

***UC Credit Limit: Maximum two courses.*

¤*UC Credit Limit: One course from English 240 and 241.*

ENGLISH — BUSINESS

(See course listings under Office Administration.)

†UC: See page 78.

ENVIRONMENTAL SCIENCE

1 The Human Environment: Physical Processes (3) UC:CSU

Lecture 3 hours.
Examines the impacts of human activities on our physical life support system. The Scientific Method and technology, and basic principles of matter and energy provide the perspective to understand the nature of our environmental problems and what may be done to prevent future impacts and remediate those that have already occurred. Topical environmental issue (e.g. climate modification, the Ozone layer, waste disposal, air pollution, energy issues, etc.) will be examined with careful consideration of the basic science which solutions to these problems must accommodate.

2 The Human Environment: Biological Processes (3) *UC:CSU

(Same as Agriculture 901. Credit not given for both.)
Lecture 3 hours.
Examines the impacts of human activities on the earth's biological systems and resources. This includes discussions of the scientific basics and principles of: ecology and ecosystem development and dynamics; population dynamics; and environmental toxicology. Careful examination will be made of the scientific basis for determination of impact of pollution, agriculture, and other human activities. Finally, what has been learned will be applied to understanding the problems of establishing meaningful environmental standards and regulations, with careful consideration and emphasis of the basic scientific realities they must reflect.

7 Introduction to Environmental Geology (3) UC:CSU

(Same as Geology 10. Credit not given for both courses.)
Lecture 3 hours.
Studies the impact that geologic processes have on the environment and human life. Topics creating special problems and limiting future opportunities, including geologic hazards (earthquakes, volcanism, flooding, downslope movement, coastal erosion and deposition), environmental health, earth resources(water, minerals, fossil fuels, wind and geothermal power, nuclear energy) will be discussed.

9 Introduction to Air Pollution (3) UC:CSU

(Same as Physical Science 5. Credit not given for both courses.)
Lecture 3 hours.
Introduces the student to the sources of air pollution and the technical problems of reducing air pollution. The course includes the physics of the atmosphere, the chemistry of air pollutants, analysis methods and possible methods of pollution control.

17 Geography of California (3) UC:CSU

(Same as Geography 14. Credit not given for both courses.)
Lecture 3 hours.
Delineates the regions of California, their biophysical features and resources in relation to patterns of population and settlement, economic activities, trade, transportation, and environmental problems.

18 People and the Earth's Ecosystem (3) UC:CSU

(Same as Geography 9. Credit not given for both courses.)
Lecture 3 hours.
Examines the historical and contemporary roles of human societies as a major agent of biological change in the earth ecosystem. Provides the basis for a revised biophysical geography that avoids the view that man is an entity apart from the ecosystems (nature) and opens the door to an understanding of biophysical geography largely freed from the concept that ours was a planet virgin until the beginning of the industrial revolution.

31 Energy and Power (3) UC:CSU

Lecture 3 hours.
Introduces the student to sources of energy, from burning coal to nuclear fusion. Discusses the physical principles involved with each source of energy with emphasis on feasibility and potential pollution problems of each. Topics to be discussed include: fossil-fuel, nuclear, hydroelectric, tidal, geothermal, solar, and other energy forms. Energy used for transportation and residential living is discussed. The important role of conservation is examined and students are encouraged to formulate their own energy policies. This course is designed for the general education student.

185 Directed Study — Environmental Science (1) †UC:CSU RPT 2

285 Directed Study — Environmental Science (2) †UC:CSU

385 Directed Study — Environmental Science (3) †UC:CSU

Prerequisite: A minimum of 3 units in Environmental Science.

Conference 1 hour per unit.
Allows students to pursue Directed Study in Environmental Science on a contract basis under the direction of a supervising instructor.

**UC Credit Limit: Maximum one course.*

EQUINE SCIENCE

(See Agriculture course listings 600-699)

ESCROW

1 Fundamentals of Escrow (3)

Prerequisite: Real Estate 1 and Real Estate 3.
Lecture 3 hours.
Covers the function, principles, and methods of escrows involving title to real and personal property. Introduces escrow terminology, forms, and procedures.

FINANCE

1 Principles of Finance (3) CSU

Lecture 3 hours.
Examines the principles of money, credit, banking, and the role of the Federal Reserve System. Studies business organization and financial policies, the financial system and types of financial instruments, interest rates, capital management, money and capital markets, and the effect of government policy on those financial markets.

2 Investments (3) CSU

Lecture 3 hours.
Emphasizes the study of the stock market from a practical viewpoint, including reading of the financial pages, analysis of industrial, railroad, public utility, mutual fund, tax free and government securities, and the proper procedure for buying and selling stocks, bonds, and options.

8 Personal Finance and Investments (3) CSU

Lecture 3 hours.
Contains lectures, discussions, and practice in applying the principles of accounting, banking, finance, office methods, management, production and merchandising to one's personal affairs. Stresses family budgeting, consumer credit, home ownership, life and property insurance, investment and savings plans, social security and retirement plans, and personal record keeping.

FRENCH

1 Elementary French I (5) UC:CSU (CAN FREN 2)

Corequisite: Concurrent enrollment in French 101 required.
Recommended: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Students with previous knowledge of French should not enroll in French 1, but in a higher level. Native speakers should enroll in French 4, 5, or 6.
Lecture 5 hours.
Introduces the fundamentals of pronunciation and grammar, practical vocabulary, and useful phrases. Emphasizes the ability to understand, speak, read, take dictation in and write simple French. Comprises basic readings in geography, customs and culture of France. English is used to explain grammatical concepts but otherwise the class is conducted as much as possible in French. Corresponds to the first year of high school French.

†UC: See page 78.

2 Elementary French II (5) UC:CSU (CAN FREN 4)

Prerequisite: French 1 or one year of high school French with a grade of "C" or better in either case, or equivalent proficiency.
Corequisite: Concurrent enrollment in French 101 required.
Recommended: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Students with previous knowledge of French should not enroll in French 2, but in a higher level. Native speakers should enroll in French 4, 5, or 6.
Lecture 5 hours.
Continues the study of elementary grammar with special emphasis on irregular verbs, direct and indirect object pronouns and the past tense. Embraces readings based on French geography, history, institutions, current events and Frances's contribution to literature, science and art. Stresses reading and writing for comprehension and grammar application with practice in simple conversation. The class is conducted entirely in French except for grammar clarification.

3 Intermediate French I (5) UC:CSU (CAN FREN 8)

Prerequisite: French 2 or two years of high school French with a grade of "C" or better in either case, or equivalent proficiency.
Corequisite: Concurrent enrollment in French 101 required.
Recommended: Eligibility for English 101 or eligibility for and concurrent enrollment in English 28.
Note: Concurrent enrollment in French 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Completes the study of basic French grammar. Includes more challenging texts, the analysis of literary texts and further amelioration of writing and speaking through written and oral reports. Teaches French culture as background for conversation and reading. Class is conducted entirely in French except where grammatical concepts need English clarification.

4 Intermediate French II (5) UC:CSU (CAN FREN 10)

Prerequisite: French 3 or three years of high school French with a grade of "C" or better in either case, or equivalent proficiency.
Note: Concurrent enrollment in French 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Utilizes more advanced reading of texts and cultural material in conjunction with conversation and discussion. Incorporates review of total structure and grammar of the French language. Emphasizes written composition as well as aural comprehension.

5 Advanced French I (5) UC:CSU

Prerequisite: French 4 with a grade of "C" or better, or equivalent proficiency.
Note: Concurrent enrollment in French 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Continues the study of grammar and of French literary movements, advanced composition, and the use of practical idioms. Stresses oral and written reports on French literature.

6 Advanced French II (5) UC:CSU

Prerequisite: French 5 with a grade of "C" or better, or equivalent proficiency.
Note: Concurrent enrollment in French 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Studies some important French texts from the seventeenth century through the present day. Both literary history and the reading of actual works are emphasized. Meaningful comparisons and contrasts are presented with works of the earlier period.

8 Conversational French (2) CSU RPT 3

Prerequisite: French 2 or equivalent with a grade of "C" or better, or equivalent proficiency.
Lecture 2 hours.
Develops conversational skill and fluency. Emphasizes idioms, correct use of tenses of French verbs, and fundamental sentence structure.

101 French Language Laboratory (1) CSU RPT 3

Corequisite: Students must be enrolled in any French Language Course.
Note: Required of all students enrolled in French 1, 2, or 3.
Laboratory 1 hour
(This is a credit/no-credit course. Students receive one unit of college credit with no letter grade by spending at least 16 hours over the semester using the equipment and regularly handing in the lab workbook assignments to their instructor.)
This language workshop uses multi-media (video, audio and computers) to enhance instruction. The workshop meets on the first floor of the Library in The Learning Center (TLC) and/or in ML 2114.

185 Directed Study — French (1) †UC:CSU RPT 2

285 Directed Study — French (2) †UC:CSU

385 Directed Study — French (3) †UC:CSU

Prerequisite: None.
Conference 1 hour per unit.
Allows students to pursue Directed Study in French on a contract basis under the direction of a supervising instructor.

GEOGRAPHY

1 Physical Geography (3) *UC:CSU (CAN GEOG 2)

Lecture 3 hours.
Studies the main features of man's physical environment with emphasis on earth-sun relationships, globes, maps, weather, climate, landforms, soils, natural vegetation, and their patterns of world distribution.

2 Cultural Elements of Geography (3) UC:CSU (CAN GEOG 4)

Lecture 3 hours.
Studies the basic human/cultural elements of geography and their correlation with the physical environment. Emphasis on population, cultural diversity, language, religion, means of livelihood, settlement patterns, political organization. Specific countries, areas, or cultural groups illustrating various topics are utilized as case studies.

3 Introduction to Weather and Climate (3) UC:CSU

(Same as Meteorology 3. Credit not given for both courses.)
Lecture 3 hours.
Studies the nature and causes of weather phenomena including winds, clouds, rain, lightning, tornadoes and hurricanes, solar energy, composition of the atmosphere, causes of air pollution, weather modification, the impact of weather on the human environment, and introduction to climate.

5 Geography of Resource Utilization (3) UC:CSU

Lecture 3 hours.
Develops the basic principles for the use and conservation of human and natural resources through a representative study of primitive livelihoods, world agriculture, forestry, fishing, mining, manufacturing, service industries, transportation, and trade.

7 World Regional Geography (3) UC:CSU

Lecture 3 hours.
A geographical survey of the world's major regions with emphasis on those features important to an understanding of current global concerns and problems.

8 Introduction to Urban Geography (3) UC:CSU

Lecture 3 hours.
Studies the origin, development, distribution, and regional variation of the world's cities, with particular emphasis on an analysis of the functions and patterns of the American cities.

9 People and the Earth's Ecosystem (3) UC:CSU

(Same as Environmental Science 18. Credit not given for both courses.)
Lecture 3 hours.
Examines the historical and contemporary roles of human societies as a major agent of biological change in the earth ecosystem. Provides the basis for a revised biophysical geography that avoids the view that man is an entity apart from the ecosystems (nature) and opens the door to an understanding of biophysical geography largely freed from the concept that ours was a planet virgin until the beginning of the industrial revolution.

†UC: See page 78.

10 Geography of the Americas (3) UC:CSU

Lecture 3 hours.
Provides a regional study of Middle and South America, Canada, and the United States, with an examination of the physical and cultural geographic backgrounds of the Americas and the current economic and land use patterns.

12 Geography of Africa, the Middle East And Oceania (3)UC:CSU

Lecture 3 hours.
Correlates the physical background with cultural, economic and political development of principal countries and peoples of Africa, Middle East, and Oceania.

14 Geography of California (3) UC:CSU

(Same as Environmental Science 17. Credit not given for both courses.)
Lecture 3 hours.
Delineates the regions of California, their biophysical features and resources in relation to patterns of population and settlement, economic activities, trade, transportation, and environmental problems.

15 Physical Geography Laboratory (2) *UC:CSU

Prerequisite: Geography 1.
Lecture 1 hour; laboratory 2 hours.
Covers plotting, interpolating, and interpreting of earth-sun relations; time, earth representation through globes and maps; temperature, moisture, pressure, climate, natural vegetation, soil groups, and landform evolution by tectonic forces, erosion, and deposition.

17 Physical Geography & Laboratory (5) *UC:CSU

(Same as Geography 1 and 15 combined.)
Lecture 4 hours; laboratory 2 hours
Studies earth-sun relations, time, earth representation through maps and globes, temperature, moisture, pressure, climate, vegetation, soil groups, landform evolution by tectonic and gradational forces, and air photo interpretation. Laboratory involves plotting interpolating, and interpreting data that is specifically linked to lecture topics.

20 Field Studies in California Geography (6) CSU

Lecture 6 hours.
Field surveys of people-land relations on the diverse physical and cultural landscapes of Southern California. These surveys enhance the understanding of past and present cultural environments that people superimpose on their natural environment.

185 Directed Study – Geography (1) †UC:CSU RPT 2

285 Directed Study – Geography (2) †UC:CSU

385 Directed Study – Geography (3) †UC:CSU

Prerequisite: A minimum of 3 units in Geography.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Geography on a contract basis under the direction of a supervising instructor.

**UC Credit Limit: Maximum 5 units.*

GEOLOGY

(See also Environmental Science 1, 7; Oceanography 1, 10.)

1 Physical Geology (3) UC:CSU (CAN GEOL 2)

Lecture 3 hours.
Introduces the student to the general field of geology, including a study of the work of rivers, winds, glaciers, oceans, vulcanism and seismology in shaping the earth, with emphasis upon the relationships existing between humans and the geological processes.

2 Earth History (3) UC:CSU

Lecture 3 hours.
Studies the evolving earth through its rock and fossil record. Incorporates concepts of plate tectonics, age dating, rock correlation and evolution to reconstruct the ever changing patterns of features, environments and organisms on the earth's surface from the formation of the planet to present day.

Normally offered in the Spring semester only.

4 Physical Geology & Laboratory (5) CSU

(Same as Geology 1 and 6 combined)
Lecture 4 hours; laboratory 2 hours
A study of the work of rivers, winds, glaciers, oceans, vulcanism, and seismology in shaping the earth, with emphasis upon the relationships existing between humans and the geologic processes. Laboratory exercises in rock and mineral identification, and map interpretation.

6 Physical Geology Laboratory (2) CSU (CAN GEOL 2)

Prerequisite: Geology 1 or concurrent enrollment.
Lecture 1 hour; laboratory 2 hours.

Laboratory exercises in identification of rock-making and ore minerals, igneous, metamorphic, and sedimentary rocks. Interpretation of topographic maps, geologic maps and aerial photographs. Geology 6 is intended to satisfy physical science lab credits for all students concurrently enrolled in Geology 1.

7 Earth History Laboratory (2) UC:CSU

Prerequisite: Geology 2 or concurrent enrollment.
Lecture 1 hour; laboratory 2 hours.
Offers opportunities to learn techniques and skills used in deciphering earth history. Includes the identification of fossils, use of maps, exercises in age dating, correlation, and reconstruction of ancient environments.

Normally offered in the Spring semester only.

10 Introduction to Environmental Geology (3) UC:CSU

(Same as Environmental Science 7. Credit not given for both courses.)
Lecture 3 hours.
Studies the impact that geologic processes have on the environment and human life. Topics creating special problems and limiting future opportunities, including geologic hazards (earthquakes, volcanism, flooding, downslope movement, coastal erosion and deposition), environmental health, earth resources (water, minerals, fossil fuels, wind and geothermal power, nuclear energy) will be discussed.

11 Introduction to Geology: Our National Parks and Monuments (3) CSU

Lecture 3 hours.
Surveys the geological development and features of our National Parks and Monuments with emphasis upon those located in the western United States. Involves optional field trips.

12 Introduction to the Geology of California (3) UC:CSU

Lecture 3 hours.
Surveys the physical and historical geology of California. Gives consideration to the twelve geomorphic provinces into which the State is divided, and to the characteristic geological record, with particular reference to the later part of earth history.

22 Geomorphology (4) UC:CSU

Prerequisite: Geography 1 or Geology 1, 11.
Lecture 3 hours; laboratory 2 hours.
Offers a basic course in the description, evolution, and classification of landforms. The student will have an opportunity to examine representative landforms through field trips.

185 Directed Study – Geology (1) †UC:CSU RPT 2

285 Directed Study – Geology (2) †UC:CSU

385 Directed Study – Geology (3) †UC:CSU

Prerequisite: Completion of 5 units of geology.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Geology on a contract basis under the direction of a supervising instructor.

†UC: See page 78.

HEALTH

7 Physical Fitness and Nutrition (3) *UC:CSU

Recommendeded: High School Biology.
Lecture 3 hours.
Considers the nature and importance of physical fitness and good nutrition in our personal and social development. Analyzes and evaluates various types of muscular activities in terms of students' needs and interests. Encourages the selection of nutritive foods for weight control, disease prevention, and general well-being.

9 Health for the Mature Individual (3) CSU

Lecture 3 hours.
Designed to meet the personal needs and interests of the mature and older students in the field of aging. Emphasis is placed on promoting and maintaining physical, emotional, and social good health, despite possible limitations of advancing years.

10 Health Education (2) *UC:CSU

(Not an activity class.)
NOTE: Credit given for either Health 10 or Health 11, but not both.
Lecture 2 hours.
Considers the nature and function of health in our social pattern. Conceptual analysis of major health problems designed to contribute to students' attitudes toward their roles as individuals physically, emotionally, and socially.

No credit given for students who have completed Health 11.

11 Principles of Healthful Living (3) *UC:CSU

(Not an activity class.)
NOTE: Credit given for either Health 10 or Health 11, but not both.
Lecture 3 hours.
Encompasses the same content as Health 10 but explores the material in greater depth.

12 Safety Education and First Aid (3) UC:CSU

Lecture 3 hours.
Consists of instruction and practical application in the prevention of and care for common accidents and emergencies in the home, school, and community. Standard and advanced American Red Cross certificates may be granted upon satisfactory completion of the course. Recommended for physical education, recreation, and allied health majors.

(Does not meet health requirement for graduation).

185 Directed Study -- Health (1) CSU RPT 2

285 Directed Study -- Health (2) CSU

385 Directed Study -- Health (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Health Education on a contract basis under the direction of a supervising instructor.

911 Cooperative Education -- Health (1) CSU RPT 3

921 Cooperative Education -- Health (2) CSU RPT 3

931 Cooperative Education -- Health (3) CSU RPT 3

941 Cooperative Education -- Health (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Maximum one course.*

HISTORY

1 Introduction to Western Civilization I (3) UC:CSU (CAN HIST 2)

Lecture 3 hours.
Teaches historically major elements in the Western heritage from the world of the Greeks to the Age of Absolutism in the 17th century. Furthers beginning students' general education, introducing them to the ideas, attitudes, and institutions basic to western civilization and acquaints them, through reading and critical discussion, with representative contemporary documents and writings of enduring interest.

2 Introduction to Western Civilization II (3) UC:CSU (CAN HIST 4)

Lecture 3 hours.
Teaches historically major elements in the Western heritage from the world of the Age of Absolutism in the 17th century to the present. Furthers beginning students general education, introducing them to the ideas, attitudes, and institutions basic to western civilization and acquaints them, through reading and critical discussion, with representative contemporary documents and writings of enduring interest.

3 History of England and Great Britain I (3) UC:CSU

Lecture 3 hours.
Surveys the political, economic, and cultural development of the British Isles and the Empire from the earliest times to the eighteenth century.

4 History of England and Great Britain II (3) UC:CSU

Lecture 3 hours.
Traces the political, economic, and cultural development of the British Isles and the Empire from the eighteenth century to the present time.

5 History of the Americas I (3) UC:CSU

Lecture 3 hours.
Teaches the political, social, and economic development of the Americas from pre-Columbian times to the beginning of the development of nationalism.

6 History of the Americas II (3) UC:CSU

Lecture 3 hours.
Surveys the development of the various national states with special consideration of the social and political affairs of the twentieth century.

7 The World's Great Religions (3) UC:CSU

Lecture 3 hours.
Offers a critical comparison of the world's great religions, as well as an appreciation of religion's contribution to humanity's cultural heritage.

8 History of the American West (3) UC:CSU

Lecture 3 hours.
Concerns the history of the evolving frontier from early explorations and the Western Movement to the late nineteenth century. Includes the consideration of the environmental factors that shaped the frontier, the people who occupy the frontier, and their customs. A study of the rise of democracy in the West and its influence on the rest of the United States.

11 Political and Social History of the United States I (3) *UC:CSU (CAN HIST 8)

Lecture 3 hours.
Surveys the history of the United States from pre-Columbian times to 1865. Devotes particular attention to the political and social development of this period. Surveys federal constitution.

12 Political and Social History of the United States II (3) **UC:CSU (CAN HIST 10)

Lecture 3 hours.
Surveys the political, social, and institutional changes in the history of the United States since the Civil War.

13 The United States in the Twentieth Century (3) **UC:CSU

Lecture 3 hours.
A historical survey of the major political, economic, intellectual, and cultural movements and events of the twentieth century.

14 Selected Issues of United States History (3) ¤UC:CSU

Lecture 3 hours.
Treats basic issues in United States history, including a study of the philosophy underlying the Declaration of Independence and the Constitution, the conflicting viewpoints of Hamilton and Jefferson, the causes of the Civil War, the impact of the Industrial Revolution, an evaluation of the Progressive Movement and the New Deal, and the significance of America's emergence as a world power.

15 Economic History of the United States (3) UC:CSU

(Same as Economics 10. Credit not given for both courses.)
Lecture 3 hours.
Stresses development and change in economic institutions. Considers the nature of American Capitalism and the effects of industrialization on American economic life.

20 History of California and the Pacific Coast (3) UC:CSU

Lecture 3 hours.
Surveys the history of the Pacific Coast of North America from the period of the explorations to the present. Emphasizes especially the cultural, political, economic, and social development of California.

21 History of the Russian People (3) UC:CSU

Lecture 3 hours.
Traces the political, social, economic, and cultural developments of the Russian people from their origins to the present day. Emphasizes in particular the expansion of Russia, the interrelations between Russia, Asia, and the West, and Soviet Russia since 1917.

27 History of Africa (3) CSU

Lecture 3 hours.
Covers the history of Africa from ancient times to the present. Includes the historical ramifications of the African Diaspora to the Western Hemisphere and the special relationship of Africa to the United States.

30 History of Contemporary China (3) UC:CSU

Lecture 3 hours.
Explores contemporary China by examining traditional and post- revolutionary politics, economics, social structures, and ideas. The course raises questions about how China can accommodate elements of the past while building for the future.

40 American History in Film (3) CSU

Lecture 3 hours.
Surveys American history from the Salem Witch trials in the Colonial period up to the Cold War, using both documentary and dramatized films to illustrate key events and ideas in American history.

41 The Afro-American in the History of the United States I (3) *UC:CSU

Lecture 3 hours.
Surveys U. S. history from the early Colonial Era through the Civil War with special emphasis on the contribution of the African-American. Provides a background in the political and social development of the United States for students majoring in the Social Sciences and, in addition, for those who wish to gain a better understanding of the African-American in American civilization. Includes a survey of the United States Constitution.

42 The Afro-American in the History of the United States II (3) **UC:CSU

Lecture 3 hours.
Surveys U. S. history from the end of the Civil War to the present time, with special emphasis on the African-American in the social and political development of American civilization.

50 Twentieth Century Europe (3) UC:CSU

Lecture 3 hours.
Surveys the political, economic, social and cultural history of the European nations since 1900 with reference to their relations with the rest of the world.

52 The Role of Women in the History of the U. S. (3) UC:CSU

Lecture 3 hours.
Explores the political, economic, social, and intellectual history of women in the development of the United States from the early colonial era to the present day with special emphasis on their contributions as well as their problems.

77 Hebrew Civilization II (3) UC:CSU

Lecture 3 hours.
Traces the major phases and events in the historical-religious development of the Jewish People from their Mesopotamian origins to the present. The greatest emphasis will be on the last 250 years from the Enlightenment to the emergence of modern Israel.

185 Directed Study -- History (1) †UC:CSU RPT 2

385 Directed Study -- History (3) †UC:CSU

Prerequisite: Grades of "B" or better in at least two courses in History or Political Science.

Conference 1 hour per unit.
Allows students to pursue Directed Study in History on a contract basis under the direction of a supervising instructor.

**UC Credit Limit: History 11 and 41 combined, maximum one course.*

***UC Credit Limit: History 12, 13 and 42 combined, maximum one course.*

¤*UC Credit Limit: No credit if taken after History 11 or 41.*

†UC: See page 78.

HORTICULTURE, ORNAMENTAL

(See Agriculture course listings 700-899.)

HUMANITIES

1 Cultural Patterns of Western Civilization (3) UC:CSU

Lecture 3 hours.
An exploration of our possibilities as human beings and the creative process underlying our greatest achievements in art, music, craftsmanship, religion, literature, philosophy, and scientific exploration, as well as an attempt to see the place of each of these in a total perspective on the human condition.

2 Studies in Selected Cultures (3) †*UC:CSU RPT 1

Lecture 3 hours.
A study in depth of a particular culture such as Modern Great Britain, Imperial China, Southeast Asia, Renaissance Italy, etc., including historical background, significant cultural trends, and key personalities.

3 The Arts of Contemporary Society (3) UC:CSU

Lecture 3 hours.
A cultural history, including literature, music, visual arts and film of the 20th century. Emphasis is on Western European and American culture and ideas basic to the development of contemporary art.

6 Great Men, Great Eras (3) *UC:CSU RPT 1

Lecture 3 hours.
An interdisciplinary program in the liberal arts, which covers an historical period such as the Renaissance from the perspectives of philosophy, art, music, literature, architecture, science, etc.

THE HUMANITIES CORE CURRICULUM HUMANITY AND WESTERN CULTURE

Humanities 11, 12, 13 and 14.

Designed to meet a large part of the general education requirements for the Associate in Arts degree and for students transferring to four-year institutions. These courses offer a unique opportunity for a comprehensive look at our cultural heritage. Different instructors present the art, history, literature, music, and philosophy of western civilization from pre-historic times to the present. There are no prerequisites, and each course may be taken separately.

11 The Ancient World (6) UC:CSU

Lecture 6 hours.

12 The Middle Ages and the Renaissance (6) UC:CSU

Lecture 6 hours.

13 From the Reformation to the French Revolution (6) UC:CSU

Lecture 6 hours.

14 The 19th and 20th Centuries (6) UC:CSU

Lecture 6 hours.

30 The Beginnings of Civilization (3) UC:CSU

Lecture 3 hours.
Introduces the general concepts of the humanities from ancient times to the Renaissance. Literature, ideas, and art are studied and compared in relation to their background, medium, organization, and style. Stress is placed on awareness of differences in cultural heritages, values, and perspectives as revealed in the Arts.

31 People in Contemporary Society (3) UC:CSU

Lecture 3 hours.
Surveys humanity's cultural development from the Renaissance to the present. Presents general information on the arts, literature, and ideas of the Renaissance, Baroque, Neoclassic, and Romantic periods. Concludes an examination of Twentieth Century culture in particular. Since Humanities 30 and 31 are independent of each other, they need not be taken in successive order.

60 People and Their World: Technology and the Humanities (3) UC:CSU

Lecture 3 hours.
Examines art, music, literature, drama, philosophy, and history in an exploration of the urban environment and society as it has been affected by technology.

61 People and Their World: The Creative Process (3) CSU

Lecture 3 hours.
Surveys humanity's creativity as expressed in myths and dreams and explores works of art and literature to discover the range of humanity's creative instinct. Involves art, music, literature, psychology, drama, philosophy, and history.

88 Cultural Heritage of Los Angeles (3) CSU

Lecture 3 hours.
Examines the unique qualities of the greater Los Angeles area through a study of its geography, archeology, history, art, architecture and ethnic contributions. Classroom presentations will be supplemented extensively with field trips to local sites.

89 Current Musical Dramatic and Art Events (2) CSU RPT 3

Lecture 1 hour; field trips 3 hours.
Enriches the academic experiences in art, dance, drama, and music. Expands cultural awareness of the student by providing opportunities to attend a wide variety of concerts, plays, dance, and art events; and to discuss these with faculty members and guest artists; to concentrate on one area, supplemented by the other three.

185 Directed Study — Humanities (1) †UC:CSU RPT 2

385 Directed Study — Humanities (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in humanities on a contract basis under the direction of a supervising instructor.

**UC Credit Limit: Maximum one course.*

INDUSTRIAL TECHNOLOGY

Industrial Technology courses are listed individually under sub headings, e.g., INDUSTRIAL TECHNOLOGY — MACHINE SHOP

Automotive Service — Listed separately
Drafting (includes CAD)
Electrical Construction and Maintenance
Electricity
General Machine Shop
Industrial Technology
Numerical Control (includes CAM)
(Computer Controlled Machine Tools)
Quality Control, Quality Management/Assurance
Quality Control, Non-Destructive Evaluation
Welding
Woodworking/Cabinetmaking

Industrial Technology classes are affiliated with the American Foundrymen's Society, American Society for Nondestructive Testing, Society of Manufacturing Engineers, American Welding Society, and the American Society for Quality Control.

Note: Industrial Technology, for any major in the department, Industrial Technology 100 must be completed during the first or second semester of study.

INDUSTRIAL TECHNOLOGY DRAFTING — MECHANICAL

Note: For any major in the Industrial Technology Department, Industrial Technology 100 must be completed during the first or second semester of study.

104 Blueprint Reading I (2) CSU

Lecture 2 hours; laboratory 1 hour.
Provides training in reading basic engineering blueprints widely used in contemporary manufacturing industries. Both the visualization and interpretation facets of reading are given extensive coverage. Exposure and analysis of common drawing types, views, lines, dimensions, tolerances, callouts, notes, symbology, and revision procedures are included.

112 Applied Technical Drafting I (4) CSU

Lecture 2 hours; laboratory 4 hours.
Instructs in the basic underlying principles and theories of mechanical drawing, the use and care of instruments and equipment, and blueprinting. Topics covered include freehand technical sketching, orthographic projection and basic multiview detail drawings, lettering, dimensioning standards, isometric pictorial drawing, sectional views, auxiliary views, and development of flat patterns.

†UC: See page 78.

212 Applied Technical Drafting II (4) CSU

Prerequisite: Industrial Technology 112 or Engineering General 2 with a grade of "C" or better.
Lecture 2 hours; laboratory 4 hours.
Applies the concepts and skills learned in basic drafting to the manufacturing industry. An intermediate level of intensity is engaged that includes oblique pictorial drawing, advanced sectioning, advanced auxiliary, basic assemblies, advanced sheet metal, and technical inking. Includes a study of dimensional tolerancing conventions and specification of screw thread callouts.

217 Applied Computer Drafting I (4)

Lecture 2 hours; laboratory 4 hours.
Provides basic training in the theory and practices of elementary computer-aided drafting. Emphasis will be placed on mechanical engineering drawings as they apply to industrial manufacturing disciplines. Analysis of computer types as well as hardware component use and care will be stressed. Both operating and application software is discussed and utilized to represent and specify simple detail drawings.

218 Technical Descriptive Geometry (3)

Lecture 2 hours; laboratory 2 hours.
Provides training in the analysis and solution of orthographic projection problems through application of the fundamental principles of descriptive geometry. Emphasis is placed on exposure to and interpretation of points, lines, and planes in primary, secondary, and successive auxiliary views. Theory and practice are included that involve visualization and graphic representation of intersections, angles, parallelism, perpendicularity, and revolutions.

312 Applied Technical Drafting III (4) CSU

Lecture 2 hours; laboratory 4 hours.
Emphasizes the advanced study of drafting industrial production parts. Includes the drawing of cast and machined details for comprehensive assemblies. Devotes special attention to surface texture specification, revision documentation, working drawings, ansi precision fits for functional holes and shafts, AWS welding symbology, detail assemblies, and geometric dimensioning and tolerancing.

317 Applied Computer Drafting II (4)

Prerequisite: Industrial Technology 217.
Lecture 2 hours; laboratory 4 hours.
Utilizes the principles and skills taught in basic computer drafting in the generation of technical drawings that feature an intermediate degree of difficulty. Areas of concentration include simple pictorial drawings, basic assemblies, and sheet metal layouts. Also included are assignments involving advanced multiview details with various sectional and auxiliary view requirements.

Cooperative Education — Work Experience

(See listing under Industrial Technology - General.)

INDUSTRIAL TECHNOLOGY — ELECTRICAL CONSTRUCTION AND MAINTENANCE

Note: For any major in the Industrial Technology Department, Industrial Technology 100 must be completed during the first or second semester of study.

122 Electrical Construction and Maintenance (3)

Lecture 3 hours.
Offers instruction in direct current theory involving concepts such as electron drift and current flow theories, primary and secondary cells, voltage, current and resistance calculations, OHM's Law as applied to series, parallel, and series-parallel circuits, power calculations, voltage drop, magnetism and electromagnetism, and direct current rotating machines.

173 Electrical Codes and Ordinances (3) RPT 1

Lecture 3 hours.
Offers special training for electrical wiremen who desire to become thoroughly familiar with the various codes and ordinances under which they work. The student studies general codes, wiring methods and fittings, and circuit requirements specified in the various ordinances.

273 Electrical Codes and Ordinances II (3) RPT 1

Lecture 3 hours.
Continues codes and ordinances for electrical wiremen. Areas of study include code requirements on equipment installation, motor installations, various types of occupancies, and high voltage circuits.

INDUSTRIAL TECHNOLOGY — ELECTRICITY

Note: For any major in the Industrial Technology Department, Industrial Technology 100 must be completed during the first or second semester of study.

371 Industrial Electrical Distribution Systems I (3)

Lecture 3 hours.
Discusses electrical distribution systems, including areas of study representative of electrical systems, apparatus and utilization equipment, conductor, wiring methods, and electrical calculations.

INDUSTRIAL TECHNOLOGY — GENERAL

Note: For any major in the Industrial Technology Department, Industrial Technology 100 must be completed during the first or second semester of study.

100 Introduction to Industrial Education (1) CSU

Lecture 1 hour.
Must be taken during first year of study. Acquaints an Industrial Education student with the various Industrial Education programs, courses, employment opportunities, and facilities offered both at Pierce College and similar and related colleges. Class visits Pierce shops, learns of course requirements, goals, and industrial or transfer relationships.

121 Manufacturing Materials and Processes (4) CSU

Prerequisite: For Industrial Technology majors, Industrial Technology 100 must be completed during first or second semester of study.
Lecture 3 hours; laboratory 3 hours.
Teaches the safe and correct use of tools and machines in manufacturing processes with metals common to industry, their uses and limitations, and a study of elementary metallurgy. Presents the study by discussion, films, videos, demonstrations, guest presenters, and industry visits. Demonstrations and performance opportunities on each metal; layout for drilling, and tapping, hand threading, filing, and finishing; bead blasting; basic metal spinning; basic forging and a variety of heat treating processes; molding and casting by various processes and materials; using various non-ferrous metals and cast iron; soldering using soft and hard solders, brazing, gas and electric welding and oxyacetylene cutting; use of the lathe, milling machine, buffers, grinders, sanders, saws and other metal working machines; non-destructive testing by dye penetrant, magnetic particle, plus illustration of ultrasonic and x-ray applications. Industrial applications of computers, CAD, CAM, numerical control, electron beam, lasers, high energy forming, and robotics. Presents materials and methods for solar collectors.

223 General Metallurgy I (3)

Lecture 3 hours.
Presents an in-depth study of the production of ferrous metals,the physical and mechanical properties and characteristics of ferrous and non-ferrous alloys. Includes a study of the varying effects of heat and alloy composition relative to structure and properties of various metals.

321 General Metallurgy II (3)

Prerequisite: Industrial Technology 223 or equivalent.
Lecture 3 hours.
Presents an in-depth study of the theory of alloys. Includes study of the concepts and principles of behavior common to most metals. Thoroughly examines the properties an related effects of heat treatment of ferrous and many non-ferrous alloys. Also studies the production methods, applications and classifications of ferrous and non-ferrous metals.

323 Art Metal I (2) CSU

Prerequisite: Art 501.
Lecture 1 hour; laboratory 5 hours.
Emphasizes the use of non-ferrous metals in the design and construction of art metal flat and hollow ware. Considers aesthetic values and the various techniques available.

325 Lost Wax Casting I (3) CSU

Prerequisite: Art 502 or concurrent enrollment. Safety and personal equipment required.
Lecture 2 hours; laboratory 2 hours.
Considers the history, processes, materials, and applications of lost wax casting. Includes study and experiences in the current principles, practices, and procedures of the lost wax casting and related processes.

327 Introduction to Composite Materials (3)

Prerequisite: Industrial Technology 121 recommended.
Lecture 3 hours.
Presents an introduction to composite materials, their physical characteristics, capabilities, limitations, methods used for manufacturing products, and special considerations required.

423 Art Metal II (2)

Prerequisite: Industrial Technology 323.
Lecture 1 hour; laboratory 3 hours.
This course deals with the design and construction of art metal objects emphasizing the use of non-ferrous metals. Attention is paid to design, aesthetics, and to the various techniques available. Covers basic silversmithing in the fabrication of ornamental pieces and hollow and flatware.

425 Lost Wax Casting II (3)

Prerequisite: Art 502 or concurrent enrollment.
Lecture 2 hours; laboratory 2 hours.
Continues the study and work presented in Lost Wax Casting I. Reviews safety and design considerations applicable to the course performance requirements. Presents additional pattern making, molding, and casting topics and opportunities including Lost Foam pattern and processes, larger or more complicated work, hollow and gravity fed casting. Includes additional molding media.

520 Industrial Arts Projects Laboratory, Metal, General (10)

Prerequisite: Industrial Technology 121.
Laboratory 20 hours.
An opportunity to initiate a project or develop a skill. Application of basics previously introduced in a metals laboratory class. Selection of goals, analysis of the problem and development of a solution.

(Offered in 1 unit modules; limit of 2 units per semester.)

521 Industrial Technology Projects Laboratory, Sand Mold Casting (10)

Prerequisite: Industrial Technology 121 or 325.
Laboratory 20 hours.
Allows concentration on individually selected problems of molding and metal casting involving various pattern types and product areas such as industrial sculpture and jewelry. Study of current industry processes and materials and expansion upon learning from previous classes. Molding by green sand, no-bake or other processes.

(Offered in 1 unit modules; limit, 2 units per semester.)

522 Industrial Technology Projects Laboratory, Lost Wax Casting (10)

Prerequisite: Industrial Technology 325, 425.
Laboratory 20 hours.
Allows the concentration on individually selected problems of molding and metal casting involving various pattern types and product areas such as industrial, sculpture and jewelry. Study of current industry processes and materials and expansion of learning from previous classes.

(Offered in 1 unit modules; limit 2 units per semester.)

523 Industrial Technology Projects Laboratory, Art Metal Work (10)

Prerequisite: Industrial Technology 323 and 423, recommended two semesters.
Laboratory 20 hours.
Allows concentration on individually selected problems of hand forging for flat and hollow ware, decorative line work, raised design, metal spinning, and wrought iron work.

(Offered in 1 unit modules; limit 2 units per semester.)

185 Directed Study — Industrial Technology (1) CSU

285 Directed Study — Industrial Technology (2) CSU

385 Directed Study — Industrial Technology (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Industrial Technology on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Industrial Technology (1) CSU RPT 3

921 Cooperative Education — Industrial Technology (2) CSU RPT 3

931 Cooperative Education — Industrial Technology (3) CSU RPT 3

941 Cooperative Education — Industrial Technology (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.
Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

INDUSTRIAL TECHNOLOGY — MACHINE SHOP

Note: For any major in the Industrial Technology Department, Industrial Technology 100 must be completed during the first or second semester of study.

130 Technology of Metal Machining Processes I (3)

Note: After Industrial Technology 130, students will be given a screening evaluation at the start of each successive course.

Prerequisite: It is recommended that Industrial Technology 121 be taken concurrently. Industrial Technology 130 cannot be taken at the same hour in the same semester.

Lecture 1; laboratory 5 hours.

An introduction to the fundamentals of metal-machining processes. Theory is supplemented with demonstrations and/or practice on: lathes, mills, grinders, drills. The course conveys concepts of metal-machining to: draftpersons, engineers/designers, NC programmers/ operators, QC inspectors; and provides entry-level skills to machinists, machine operators, and tool makers.

230 Technology of Metal Machining Processes II (3)

Prerequisite: Industrial Technology 130, Industrial Technology 121 is recommended as completed or taken concurrently. Industrial Technology 230, 330, 331, and 332 cannot be taken at the same hour in the same semester.

Lecture 1 hour; laboratory 5 hours.

Increases the depth and breadth of understanding of the theoretical concepts and practical skills introduced in Industrial Technology 130. The students will advance their studies in metallurgy theory and practice, engineering materials, metrology, and conventional machining techniques. EDM will be introduced.

330 Technology of Metal Machining Processes III (3)

Prerequisite: Industrial Technology 230, Industrial Technology 100 (Industrial Technology majors only), 121 recommended as completed or taken concurrently. Industrial Technology 230, 330, 331, and 332 cannot be taken at the same hour in the same semester.

Lecture 1 hour; laboratory 5 hours.

Emphasis is placed on the development of skill and concepts learned in Industrial Technology 130 and Industrial Technology 230 for those persons who will be employed in the metal-machining industry. Close tolerance work will be required. Additional techniques such as EDM and jig boring will be introduced.

331 Tool Design For Production (3)

Prerequisite: Industrial Technology 230.

Note: Industrial Technology 230, 330, 331, and 332 cannot be taken at the same hour in the same semester.

Lecture 1 hour; laboratory 5 hours.

The student studies the tooling and fixturing necessary for production in conventional and Computer Numerical Control (CNC). The course requires a high degree of initiative on the part of the student to complete the course.

332 Projects Laboratory in Metal Machining Processes I (3)

Prerequisite: Industrial Technology 230.

Note: Industrial Technology 121 recommended completed or taken concurrently. Industrial Technology 230, 330, 331, and 332 cannot be taken at the same hour in the same semester.

Lecture 1 hour; laboratory 5 hours.

The course develops skills in the techniques of design, planning and execution. Proto-type work not possible in regular classes will be covered. Emphasis is placed on developing a project that requires extensive job planning, independent study and development.

Cooperative Education — Work Experience

(See listing under Industrial Technology - General.)

INDUSTRIAL TECHNOLOGY — NUMERICAL CONTROL

(Automated and Computer Controlled Machining)

Note: For any major in the Industrial Technology Department, Industrial Technology 100 must be completed during the first or second semester of study.

140 Fundamentals of CNC Technology (3)

Prerequisite: Industrial Technology 130 or equivalent experience recommended.

Lecture 1 hour; laboratory 5 hours.

Acquaints the beginning student in numerical control with the fundamental concepts underlying this new science. Studies the format and manual preparation of tapes for a variety of basic numerical control systems. Provides practical experience in the set up and operation of numerical controlled machine tools employing point-to-point, continuous path and circular interpolation machining control.

242 Introduction to CAD/CAM — Numerical Control (3)

Prerequisite: Industrial Technology 112 or Engineering General 2 or Industrial Technology 140 with a grade of "C" or better.

Lecture 3 hours.

Introduces fundamental concepts of computer-aided design and computer-aided manufacturing to the student pursuing specialized work in architecture, drafting, engineering or numerical control programming.

244 CNC Programming and Machine Operation — Lathe (3)

Prerequisite: Industrial Technology 140 or equivalent experience, plus Industrial Technology 230 or concurrent enrollment.

Lecture 1 hour; laboratory 5 hours.

Continues the study of N/C part program preparation begun in Industrial Technology 140 and develops the techniques of planning for efficient operation sequencing. Compares N/C, CNC and DNC; including examination of these techniques in relation to CAD/CAM. Introduces computer-assisted N/C part programming languages, emphasizes writing and running CNC Lathe programs.

248 CNC Programming and Machine Operation — Mill (3)

Prerequisite: Industrial Technology 140 or equivalent experience.

Lecture 1 hour; laboratory 5 hours.

Acquaints the advanced student with three axis CNC applications involving manufacturing planning, tooling design and/or specification, CNC mill programs employing full 3-axis positioning and implementation of programs using CNC mill equipment in the CAM lab. Students will learn and practice micro-computer assisted part programming of CNC mill.

342 Computer-Assisted Part Programming Languages — Intro APT (3)

Prerequisite: Industrial Technology 140 or equivalent experience.

Lecture 3 hours.

Introduces the student to the APT computer system used by numerical control part programmers. Emphasis is placed upon the APT system for two and three axis, point-to-point and continuous path controllers. Purpose, program nomenclature and symbols, geometry definitions, applications, computing, tool motion instructions, repetitive programming techniques, and the use of postprocessor documentation are discussed. Students will write and debug their own practice APT programs.

444 Projects Laboratory-CNC Lathe Programming (3)

Prerequisite: Industrial Technology 140, 244 with a grade of "C" or better.

Lecture 1 hour; Laboratory 5 hours.

Develops skills in the techniques of design, planning, and execution of computer numerical control programs for a CNC lathe. Part programs and CNC programming practices not possible in Industrial Technology 244 will be covered. Emphasis is placed on developing a project to be programmed and machined using a CNC lathe, requiring extensive job planning, independent study and development.

448 Projects Laboratory-CNC Mill Programming (3)

Prerequisite: Industrial Technology 140, 248 with a grade of "C" or better.

Lecture 1 hour; Laboratory 5 hours.

Develops skills in the techniques of design, planning, and execution of computer numerical control programs for a cnc mill. Part programs and CNC programming practices not possible in Industrial Technology 248 will be covered. Emphasis is placed on developing a project to be programmed and machined using a cnc mill, requiring extensive job planning, independent study and development.

185 Directed Study — Numerical Control (1) RPT 2

285 Directed Study — Numerical Control (2)

385 Directed Study — Numerical Control (3)

Conference 1 hour per unit.
Allows students to pursue Directed Study in Numerical Control on a contract basis under the direction of a supervising instructor.

Cooperative Education — Work Experience

(See listing under Industrial Technology - General.)

INDUSTRIAL TECHNOLOGY — QUALITY CONTROL — QUALITY MANAGEMENT/ ASSURANCE

Note: For any major in the Industrial Technology Department, Industrial Technology 100 must be completed during the first or second semester of study.

102 Introduction to Precision Inspection and Quality Control (2)

Lecture 1 hour, laboratory 2 hours.
Provides entry level capabilities into the field of precision inspection, electromechanical military solder inspection, and quality control procedures. It serves as an introductory course for those desiring to follow the Quality Control Management program who have no previous employment experience in this field.

150 Fundamentals of Quality Control (3)

Lecture 3 hours.
Introduces basic quality control nomenclature, functions, and practices. Major emphasis will be given to quality control manuals and specifications, including such basic governmental publications as MIL-Q-9858A, MIL-I-45208A, MIL-STD-45662A, MIL- STD-1520, and NHB 5300 series.

250 Quality Control Systems (3)

Lecture 3 hours.
Continues the first semester course, Fundamentals of Quality Control. Gives increased emphasis to the fundamentals of engineering as applied to quality control problems and procedures, as well as a study of related basic quality control manuals and government publications, including NHB 5300 series, DCAS 8200.

252 Introduction to Destructive Materials Testing (3)

Lecture-demonstration 3 hours.
Covers ASTM and Federal test standards, and principles for mechanical testing. Provides some hands-on experience in the laboratory, including hardness, tensile, and other destructive methods.

254 Quality Control Measurements (3)

Note: This is a management course.
Lecture-demonstration 3 hours.
Provides an opportunity for a practical and theoretical understanding of many types of electro-mechanical optical precision measuring devices. Covers Mil Std. 120 and Mil Std. 202.

256 Introduction to Non-Destructive Materials Testing (3)

Note: This is a management course.
Lecture 3 hours.
Covers ASTM and Federal Test standards and principles for radiography, magnetic, ultrasonic, eddy current, and penetrant non-destructive methods.

350 Quality Control Statistical Procedures (3)

Prerequisite: Mathematics 145 or equivalent.
Lecture 3 hours.
Presents the theory and practical application of STATISTICAL PROCESS CONTROL (SPC) methods such as "X and R" and "P" charts and continues with a study of various acceptance sampling plans and statistical sampling plans.

352 Quality Control Engineering (3)

Lecture 3 hours.
Covers such topics as formulation of a quality policy, quality analysis, planning, information feed-back, process engineering source, survey, and auditing.

354 Quality Control Inspection Planning (3)

Lecture 3 hours.
Deals with aspects of planning. Includes drawing review, contract review, formulation of a Quality Control plan, review processes, inspection, and documentation.

450 Quality Control Management (3)

Lecture 3 hours.
Provides an exercise in the formulation and administration of a complete "product assurance" regime which covers software technology, quality engineering, quality assurance and product reliability.

452 Quality Control Cost Estimating (3)

Prerequisite: Industrial Technology 150, 250, or equivalent experience.
Lecture 3 hours.
Introduces elements of quality control cost estimating. Emphasizes quality control functions, but covers other functional areas when techniques apply to more than quality control.

454 Quality Control Procedures Writing (3)

Prerequisite: Industrial Technology 150, 250, and 354, or equivalent experience.
Lecture 3 hours.
Examines basic principles of communication and their application to the specialized field of quality control. Emphasizes the writing of actual procedures for quality control programs.

INDUSTRIAL TECHNOLOGY — QUALITY CONTROL — NONDESTRUCTIVE TESTING

Note: The following courses are technical courses in accordance with the American Society for Non-Destructive Testing.
Prerequisite: For any major in the Industrial Technology department, Industrial Technology 100 must be completed by the end of the second semester of study.

151 Introduction to Quality and Nondestructive Evaluation (3)

Lecture 3 hours.
Provides an introduction to the field of Quality Assurance and Non-Destructive Evaluation. Provides a survey of the elements within QA and NDE. Covers the specialties involved, terms, methods, equipment, standardization and standards including the fundamental Mil-Stds and regulations.

153 Nondestructive Testing/Visual Examination (3)

Lecture 3 hours.
Presents a study of Visual Examination testing on various types of materials for the location of defects in the materials and parts being inspected. Covers safety, terms, methods, assistance tools and equipment, standards, and procedures for performing visual inspections on the parts and materials to be inspected.

157 Liquid Penetrant/Magnetic Particle Testing (3)

Prerequisite: Industrial Technology 121 and Mathematics 145, Mathematics 115 recommended.
Lecture 2 hours; Laboratory 2 hours.
A study of Liquid Penetrants and Magnetic Particle methods, applications, limitations, theory, principles, techniques, equipment, materials, necessary considerations, and interpretation of results. Includes safety. Covers applicable ASNT-TC-1A and MIL-STD-410 standards.

253 Nondestructive Testing Ultra Sonic Inspection (3)

Prerequisite: Industrial Technology 121, Mathematics 145, 146 (Mathematics 115 and 240 may be substituted), recommended.
Lecture 2 hours; laboratory 2 hours.
Presents the principles, procedures, techniques, and applications of ultrasonic energy in the inspection of various materials for the locating of discontinuities in the materials and parts being inspected and the safety involved in performing the inspections with the equipment.

255 Nondestructive Testing/ Eddy Current Inspection (3)

Lecture 2 hours; laboratory 2 hours.
Presents the principles, practices, procedures, techniques, and applications of Eddy Current inspection. Covers the equipment, accessories, selection, and limitations in testing for material discontinuities, condition, and thickness and the interpretation of findings.

353 Radiographic Inspection (3)

Prerequisite: Industrial Technology 121, Mathematics 145, 146, (Mathematics 115 and 240 may be substituted), recommended.
Lecture 2 hours; laboratory 2 hours.
Covers theory of X-ray and Gamma radiation, radiation characteristics, interaction with matter, radiation sources and equipment. Includes safety, procedures, techniques, and the basic interpretation of findings. Covers the determination of compliance with applicable specifications and standards.

451 Nondestructive Testing/ Radiographic Interpretation (3)

Prerequisite: Industrial Technology 121, 353, Mathematics 145, 146 (Mathematics 115 through 240 may be substituted), recommended.
Lecture 2 hours; laboratory 2 hours.
Presents a study of radiographic interpretation of X-ray and Gamma ray films taken of various types of materials, for the locating of defects in the materials and parts being inspected. Covers safety, processing, and interpretation of the film.

453 Leak Detection (3)

Prerequisite: Industrial Technology 151 or NDE experience.
Lecture 2 hours; laboratory 2 hours.
Presents and studies the principles, practices, equipment, materials, procedures, and purposes of leak detection. Includes various specifications and standards.

457 Procedure Writing for Nondestructive Evaluation (3)

Lecture 3 hours.
Presents the writing of procedures for Nondestructive Evaluation, their rationale, preparation, and application. Covers procedures for all operations.

Cooperative Education — Work Experience

(See listing under Industrial Technology - General.)

INDUSTRIAL TECHNOLOGY — WELDING

NOTE: Credit for technical courses may or may not be transferable in other than major or related fields. After completion of Industrial Technology 160 or 161 students will be given a screening evaluation at the start of each successive course. For Industrial Technology majors, Industrial Technology 100 must be completed during the first or second semester.

160 Vocational Welding I (7)

Lecture 3 hours; laboratory 12 hours.
Gives the beginning student a solid foundation in the principles of welding and cutting, and electric arc welding. Emphasizes safety along with related information on equipment, methods and materials.

161 General Welding I (3)

Note: Industrial Technology 161 and 162 are equivalent to 160.
Lecture 1 hour; laboratory 5 hours.
Gives the beginning student a solid foundation in the principles of welding and cutting, and electric arc welding. Emphasizes safety along with related information on equipment, methods and materials.

162 Beginning Welding II (3)

Note: Industrial Technology 161 and 162 are equivalent to 160.
Prerequisite: Industrial Technology 161 recommended.
Lecture 1 hour; laboratory 5 hours.
Continues the work from General Welding I. Reviews and extends information and skill training regarding safety, equipment, methods, and materials. This course plus Industrial Technology 161 equals Industrial Technology 160. Credit is not given for both. AWS affiliated.

260 Vocational Welding II (7)

Prerequisite: Industrial Technology 160.
Lecture 3 hours; laboratory 12 hours.
Provides the student with the basic principles and skills to perform general arc welding operations successfully.

261 General Arc Welding I (3)

Note: Industrial Technology 261 and 262 are equivalent to 260.
Prerequisite: Industrial Technology 161.
Lecture 1 hour; laboratory 5 hours.
Provides the student with the basic principles and skills necessary to perform general arc welding operations successfully.

262 General Arc Welding II (3)

Note: Industrial Technology 261 and 262 are equivalent to 260.
Prerequisite: Industrial Technology 261.
Lecture 1 hour; laboratory 5 hours.
Continues the work begun in General Arc Welding I. Reviews and extends information and skill training regarding safety, blueprints, materials, methods, and equipment. This course plus Industrial Technology 261 equals Industrial Technology 260.

360 Vocational Welding III (7)

Prerequisite: Industrial Technology 260.
Lecture 3 hours; laboratory 12 hours.
Gives the student a solid foundation in the principles and skills necessary to perform weldments successfully using Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW) on ferrous and non-ferrous metals. Emphasizes GTAW.

361 Inert Gas Arc Welding I (3)

Note: Industrial Technology 361 and 362 are equivalent to 360.
Prerequisites: Industrial Technology 261 and 262 or 260. Metallurgy I or concurrent enrollment recommended (required for degree or certificate programs).
Lecture 1 hour; laboratory 5 hours.
Gives the student a solid foundation in the principles and skills necessary to perform weldments successfully using Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW) on ferrous and non-ferrous metals. Emphasizes GTAW.

362 Inert Gas Arc Welding II (3)

Note: Industrial Technology 361 and 362 are equivalent to 360.
Recommended: Industrial Technology 162, 262, and 361 or 160, 260, and 360.
Lecture 1 hour; laboratory 5 hours.
Completes the solid foundation in the principles and skills necessary to perform weldments successfully using Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW), on ferrous and non-ferrous metals. Emphasizes GTAW. This course plus Ind Tech 361 equals Industrial Technology 360. Credit not given for both. AWS affiliated.

460 Vocational Welding IV (7)

Prerequisite: Industrial Technology 260 and 360 with a grade "C" or better. Metallurgy II or concurrent enrollment recommended (required for degree or certificate programs).
Lecture 3 hours; laboratory 12 hours.
Gives the student the depth of training to prepare for AWS-L. A. City Certification in arc welding of structural steel. Provides related study for a broad understanding of the welding processes as well as pertinent codes. Acquaints the student with automatic and semi-automatic welding processes.

461 Advanced Arc Welding I (3)

Note: Industrial Technology 461 and 462 equivalent to 460.
Prerequisite: Completion of Industrial Technology 261, 262, 361, 362 or Industrial Technology 260 and 360, with grades of "C" or better. Metallurgy II or concurrent enrollment recommended (required for degree certificate programs).
Lecture 1 hour; laboratory 5 hours.
Gives the student the depth of training for AWS-L. A. City Certification in art welding of structural steel. Provides related study for a broad understanding of the welding processes as well as pertinent codes. Acquaints the student with automatic and semi-automatic welding processes.

462 Advanced Welding II (3)

Note: Industrial Technology 461 and 462 are equivalent to 460.
Prerequisites: Industrial Technology 461 or 460 recommended, with a grade of "C" or better. Metallurgy II or concurrent enrollment recommended (required for degree of certificate programs).
Lecture 1 hour; laboratory 5 hours.
Provides in depth training to prepare for AWS-LA City Certification in arc welding of structural steel. Related study for a broad understanding of the welding processes and pertinent codes. Applies automatic and semi-automatic welding processes. Industrial Technology 461 and 462 equals Industrial Technology 460. Credit not given for both AWS affiliated.

Cooperative Education — Work Experience

(See listing under Industrial Technology - General.)

INDUSTRIAL TECHNOLOGY — WOODWORKING

120 Basic Woodworking (4) CSU

Lecture 3 hours; laboratory 3 hours.
Covers the care and use of hand tools and machines as well as fasteners, adhesives and basic cabinet assembly. Also includes planning and stock billing. Emphasizes safety.

220 Machine Woodworking (4) CSU RPT 1

Prerequisite: Industrial Technology 120.
Lecture 3 hours; laboratory 3 hours.
Deals with advanced wood and plastics technology, planning and practice in the production of industrial cabinetry and custom furniture making.

320 Cabinetmaking and Millwork Technology (4) CSU

Prerequisite: Industrial Technology 220.
Lecture 2 hours; laboratory 4 hours.
Studies safe use of tools, machines and materials related to cabinetmaking. Includes lecture, discussion, demonstrations, evaluation and student performance in the following area: manufactured materials, fasteners, basic casework, kitchen cabinets, stock billings, joinery, integration of components, plastic laminates, and surface preparation. Instruction covers occupations, design planning and construction techniques.

322 Painting and Finishing (2) CSU

Lecture 1 hour; laboratory 3 hours.
Studies common wood finishes and techniques of application,with practical experience in staining, filling, sealing, shellacking, varnishing, lacquering, and synthetic resins. Includes some refinishing information.

420 Furniture Repair and Refinish (2) CSU

Prerequisite: A grade of "C" or better in Industrial Technology 322.
Lecture 1 hour; laboratory 3 hours.
A comprehensive study of the techniques in refinishing used and antique furniture along with the practical skills in repairing scratches, dents, burns, veneer and structural damage.

ITALIAN

1 Elementary Italian I (5) UC:CSU (CAN ITAL 2)

Recommendeded: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Note: Students with previous knowledge of Italian should not enroll in Italian 1 or 2, but in a higher level. Native speakers should enroll in Italian 3, 4, 5, or 6.
Lecture 5 hours.
Stresses the fundamentals of pronunciation and the ability to understand, speak and write simple Italian. Includes basic structural aspects and incorporates basic facts on the culture, customs and geography of Italy and an introduction to Italian songs and proverbs. Corresponds to the first year of high school Italian.

2 Elementary Italian II (5) UC:CSU (CAN ITAL 4)

Prerequisite: Italian 1 or one year of high school Italian, with a grade of "C" or better, or equivalent proficiency. Recommended: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Note: Students with previous knowledge of Italian should not enroll in Italian 1 or 2, but in a higher level. Native speakers should enroll in Italian 3, 4, 5, or 6.
Lecture 5 hours.
Continues to stress the fundamental abilities to understand, speak, read and write simple Italian. Continues to include basic structural aspects and expands practical conversational vocabulary and competency in using it. Continues to incorporate information on the culture and customs of Italy, and an introduction to Italian songs and proverbs. Corresponds to the second year of high school Italian.

3 Intermediate Italian I (5) UC:CSU (CAN ITAL 8)

Prerequisite: Italian 2 or two years of high school Italian with a grade of "C" or better, or equivalent proficiency. Recommended: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28.
Note: Concurrent enrollment in Italian 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Reviews the elementary structure studied in Italian 1 and 2 and continues the grammar necessary for communication and for comprehension of both spoken and written Italian. Promotes fluency in Italian by immersing the student in practical situations which require extensive use of the language and by building on vocabulary and related skills through them. Continues the study of Italian life, civilization and culture and provides special attention to representative Italian literature.

4 Intermediate Italian II (5) UC:CSU (CAN ITAL 10)

Prerequisite: Italian 3 or three years of high school Italian with a grade of "C" or better, or equivalent proficiency. Note: Concurrent enrollment in Italian 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Expands the structural concepts studied in Italian 1, 2 and 3. Develops additional vocabulary and related skills for maximum comprehension and expression. Provides greater depth in Italian literature with wider range of reading. Emphasizes discussion and analysis of the material. Continues the study of Italian life, culture and civilization.

5 Advanced Italian I (5) UC:CSU

Prerequisite: Italian 4 with a grade of "C" or better, or equivalent proficiency.
Note: Concurrent enrollment in Italian 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Introduces some of the important movements in Italian literature. It includes reading prose and poetry from representative Italian authors and continues the study of advanced composition and grammar.

6 Advanced Italian II (5) UC:CSU

Prerequisite: Italian 5 with a grade of "C" or better, or equivalent proficiency. Note: Concurrent enrollment in Italian 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Concerns works of Italian literature selected by students and instructor on the basis of relevance, interest and historical impact. Emphasis is on individual study and research shared in the form of reports both oral and written. This serves as a basis for the study of advanced composition, grammar and style.

8 Conversational Italian (2) CSU RPT 3

Prerequisite: Italian 2 or equivalent with a grade of "B" or better, or equivalent proficiency.
Lecture 2 hours.
Provides opportunities for practical conversation on everyday topics, current events, and cultural material, and for expansion of vocabulary according to student interest.

185 Directed Study — Italian (1) †UC:CSU RPT 2

285 Directed Study — Italian (2) †UC:CSU

385 Directed Study — Italian (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Italian on a contract basis under the direction of a supervising instructor.

JAPANESE

1 Elementary Japanese I (5) UC:CSU (CAN JAPN 2)

Recommendeded: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Note: Students with previous knowledge of Japanese should not enroll in Japanese 1 or 2, but in a higher level. Native speakers should enroll in Japanese 3 or 4.
Lecture 5 hours.
Stresses the fundamentals of aural comprehension and pronunciation, basic vocabulary, useful phrases and the ability to speak, read and write simple Japanese. Includes basic facts on customs, culture and geography.

2 Elementary Japanese II (5) UC:CSU (CAN JAPN 4)

Prerequisite: Japanese 1 with a grade of "C" or better.. Recommended: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Note: Students with previous knowledge of Japanese should not enroll in Japanese 1 or 2, but in a higher level. Native speakers should enroll in Japanese 3 or 4.
Lecture 5 hours.
Continues the study of fundamentals of aural comprehension, basic vocabulary and the ability to speak, read and write simple Japanese. Includes orientation to customs, culture and geography.

3 Intermediate Japanese I (5) UC:CSU

Prerequisite: Elementary Japanese 2 or equivalent.
Lecture 5 hours.
Continues the study of grammar and vocabulary building for conversational fluency and written composition. Begins the study of short narrative writings.

4 Intermediate Japanese II (5) CSU

Prerequisite: Intermediate Japanese 1 or equivalent.
Lecture 5 hours.
Continues the study of grammar and vocabulary building for conversational fluency and written composition. Continues study of short narrative writings. Includes study of Japanese culture.

8 Elementary Conversational Japanese (2) CSU RPT 3

Prerequisite: Japanese 2 or equivalent with a grade of "C" or better or equivalent proficiency.
Lecture 2 hours.
Provides opportunity for oral communication in everyday settings about current events, general cultural materials and individual personal interests.

27 Cultural Awareness through Advanced Conversation (3) CSU

Prerequisite: Japanese 3 or equivalent proficiency.
Lecture 3 hours.
Develops oral facility and cultural awareness, emphasizing speaking and understanding Japanese in everyday situations common to life in Japan. Good grasp of grammar is a prerequisite. Prepares student to work in Japanese company or related business, or to live in Japan.

185 Directed Study — Japanese (1) †UC:CSU RPT 3

Conference 1 hour per unit
Allows students to pursue Directed Study in Japanese on a contract basis under the direction of a supervising instructor.

JOURNALISM

100 Social Values in Mass Communications (3) CSU (CAN JOUR 4)

Lecture 3 hours.
A general interest survey and evaluation of the mass media in economic, historical, political, psychological and social terms. Focus is to help the media consumer better understand today's mass communications: newspapers, radio, television, motion pictures, magazines, advertising and public relations. Course content discusses relationships, ethics, rights and responsibilities of media in today's society.

101 Collecting and Writing News (3) CSU (CAN JOUR 2)

Recommended: Concurrent enrollment in Journalism 100 for all journalism majors.
Lecture 3 hours.
Stresses instruction and practice in news gathering with particular emphasis on documentation, research and news writing. Adherence to professional writing style; legal and ethical aspects of the profession is included. Required of all journalism majors.

†UC: See page 78.

108 Article Writing (3) CSU

Lecture 3 hours.
Offers instruction in the writing of material for a magazine, including articles, editorials, and reviews suitable for publication; includes practice in editing and the use of illustrative materials.

202 Advanced Newswriting (3) CSU

Prerequisite: Journalism 101 with a grade of "C" or better. Ability to type.
Recommended: Concurrent enrollment in Journalism 214 for journalism majors.
Lecture 3 hours.
Provides the student with principles and practice in writing specialized types of newspaper stories and increases his mastery of fundamental reporting techniques. Interpretative writing skills, editorial writing, and feature writing are included. Required of all journalism majors.

216 Copyreading and Headline Writing (3) CSU

Prerequisite: Journalism 101 with a grade of "C" or better. Ability to type.
Recommended: Concurrent enrollment in Journalism 202 for Journalism majors.
Lecture 2 hours; laboratory 3 hours.
Offers study and practice in analysis of structure and effectiveness of written materials, rewriting, correction of errors, proofreading, headline writing, news and picture evaluation, and page design. Opportunity is provided to work with the staff on the campus newspaper. Required of all journalism majors.

217 Publication Laboratory (2) CSU RPT 3

(Formerly Journalism 17)
Prerequisite: Journalism 101 with grade "C" or better; concurrent enrollment in Journalism 202 or 218 or Photography 21.
Laboratory 6 hours.
Stresses constructive criticism of students in writing style and news evaluation. Publication production plans are developed. The instruction is directed by newspaper adviser, editor and staff members.

218 Practical Editing (3) CSU RPT 3

Prerequisite: Journalism 202 with a grade of "C" or better.
Recommended: Prior or concurrent enrollment in Journalism 216 for Journalism majors.
Lecture 1 hour; supervised activity 6 hours.
Provides practical instruction and practice in writing and editing the campus newspaper. Editions are evaluated in regularly scheduled class meetings.

219 Techniques for Staff Editors (1) CSU RPT 2

Prerequisite: Journalism 101 with a grade of "C" or better, and concurrent enrollment in Journalism 202 or 218 or Photography 21.
Laboratory 3 hours.
Offers instruction for campus newspaper editors in editorial writing and analysis of editorial problems. Emphasis is placed on formulating editorial policy.

220 Magazine Editing (3) CSU RPT 3

Prerequisite: Journalism 101 with a grade of "C" or better and concurrent enrollment in Journalism 202 or 218 or Photography 21.
Lecture 2 hours; laboratory 3 hours.
Presents the theory and practice of writing and editing a magazine. Artistic design, principles of harmony and unity, and creativity in layout are stressed. Writing and editing of copy, designing pages, selecting photographs and other illustrations and design materials, preparing them for production; arranging production schedules; and other aspects of publishing are included.

221 News Photography (4) CSU RPT 3

(Same as Photography 21. Credit not given for both courses.)
Prerequisite: Photography 11 and 20 with a grade of "B" or better.
Lecture 2 hours; laboratory 6 hours.
Gives practical experience in the taking and processing of news and feature pictures, emphasizing the use of cameras normally employed in photo-journalism. Affords students the opportunity to take, develop,and print pictures for the college newspaper and magazine.

185 Directed Study — Journalism (1) CSU RPT 2

285 Directed Study — Journalism (2) CSU

385 Directed Study — Journalism (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Journalism on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Journalism (1) CSU RPT 3

921 Cooperative Education — Journalism (2) CSU RPT 3

931 Cooperative Education — Journalism (3) CSU RPT 3

941 Cooperative Education — Journalism (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

LAW

For additional law courses, see Business and Sociology.

3 Civil Rights and the Law (3) UC:CSU

Lecture 3 hours.
Offers comparative and analytical study of the law and related problems concerning Civil Rights. Due process of law, freedom of expression, freedom of religion, racial equality, and democratic processes are the topics under consideration, with emphasis on recent court decisions and international trends.

LEARNING SKILLS

Note: Open Entry/Open Exit and Credit/No-Credit courses.

1 Reading (3) (NDA) RPT 3

Laboratory 9 hours.
Individualized, self-paced reading remediation for ESL students and/or native speakers. Program ranges from learning to read to improving comprehension and interpretation. Tutors, computer and audio-cassette programs supplement learning.

2 English Fundamentals (3) (NDA) RPT 3

Recommendeded: Concurrent enrollment in Learning Skills 7.
Laboratory 9 hours.
Individualized, self-paced work on punctuation, sentence structure and correctness, supplemented by computer-assisted instruction.

3 Vocabulary Development (5) (NDA) RPT 3

Lecture 5 hours.
Individualized, self-paced text and computer-assisted vocabulary study for ESL students and native speakers. Programs ranging from basic to college-advanced levels are tailored to student need.

4 The Mechanics of Spelling (1) (NDA) RPT 3

Laboratory 3 hours.
Individualized, self-paced study of spelling rules, word groups, most frequently misspelled words. Programmed texts, computer- assisted instruction supplement study.

5 English As A Second Language: Fundamentals (1) (NDA)

Laboratory 2 hours.
Small group workshops and tutorial practice in largely oral English communication. Emphasis on vocabulary building and simple grammar structures. Students are encouraged to generate relevant English speech and writing.

7 Basic Composition (3) (NDA)

Laboratory 9 hours.
Small group workshop (4-10 people) in all types of writing, from journal to research paper. ESL and native-speaking students participate in exercises, writings, peer response, as well as work individually at their own pace. Tutors, computer programs supplement workshop activities. Preparation for English 84-87 or English 21.

10 Mathematics Fundamentals (3) RPT 3 (NDA)

Laboratory 5 hours.
Individualized, self-paced instruction in math from whole number operations to algebra and geometry. Tutorial and computerized math programs provide review, remediation and/or practice in college math.

185 Directed Study – Learning Skills (1) (NDA) RPT 2

Conference 1 hour per unit.
Allows students to pursue Directed Study in Learning Skills on a contract basis under the direction of a supervising instructor.

Credit Limit: A maximum of 3 units Directed Study in Learning Skills may be taken for credit.

LIBRARY SCIENCE

101 Library Research Methods (1) CSU

Knowledge and functional capability in written and spoken English are necessary for the successful completion of this course. When enrolling in this class, eligibility for English 28 or a more advanced course is recommended.

Lecture 1 hour.
Provides an individualized, self-paced course to teach the student how to make independent use of library resources for maximum educational and life-long personal benefit. Standard research techniques are emphasized and specialized information sources are examined.

LIFE SCIENCE

Life Science courses are listed under the headings of:

Anatomy
Biology
Microbiology
Oceanography
Physiology

LINGUISTICS

1 Introduction to Language and Linguistics (3) UC:CSU

(Same as Anthropology 104. Credit not given for both courses.)
Lecture 3 hours.
This introductory course in Linguistics surveys the great variety of ways humans communicate both verbally and non-verbally. Focuses on the structure, function, and history of language, with selections on the sociology and psychology of language, language learning, and the origins and evolution of language.

MACHINE SHOP TECHNOLOGY

(See listing under Industrial Technology - Machine Shop.)

MANAGEMENT

2 Organization and Management Theory (3) CSU

Lecture 3 hours.
Uses the case method to study problems in the organization and management of business. Emphasizes correlation of operating functions, appraising business conditions, sales, procurement, personnel, financial policies and facilities.

6 Public Relations (3) CSU RPT 1

Lecture 3 hours.
Covers essentials for organizing and operating a public relations program. Includes study of the relations with the community, customers, stock holders and news media. Evaluates communication techniques used to improve public relations and create a favorable public image.

13 Small Business Management I (3) CSU

Lecture 3 hours.
Presents a systematic approach to successful small business operation. Covers personnel evaluation, pre-ownership preparation, management and leadership, financing, location, taxation, records, employees, purchasing, advertising, sales and credit. Emphasizes adequate planning and preparation for success.

20 Industrial Management (3)CSU

Lecture 3 hours.
Covers principles, methods, and procedures related to the efficient utilization of resources in production, specialization of process and labor, product and process analysis, production planning and control, materials procurement and control, methods improvement, time study and wage determination, selection of plant location, layout planning, and production organization.

31 Human Relations for Employees (3) CSU

Lecture 3 hours.
Covers the practical application of psychological and sociological principles to the study of human relation in business and industry. Emphasizes case studies.

33 Personnel Management (3) CSU

Lecture 3 hours.
Consists of a critical examination of the principles, methods, and procedures related to the effective utilization of human resources in organizations. Includes the management of employment recruiting, testing, selection and placement; job evaluation; wage and salary administration; labor relations and communication; performance evaluation; promotion and transfer; accident prevention; labor law and legislation; benefits and services; discipline, motivation and morale.

48 Management Systems and Procedures (3) CSU

Lecture 3 hours.
Introduces the need for management systems and procedures and their establishment. Emphasizes the relationship of the systems functions to business management. Covers case studies for systems analysis and solution, records, management, design and control of forms and reports, procedures, manuals, reproduction processes, Electronic Data Processing, and the principles of Integrated Data Processing and Operations Research.

Cooperative Education – Work Experience

(See Business - Cooperative Education.)

MARKETING

1 Principles of Selling (3) CSU

Lecture 3 hours.
This course emphasizes the principles used in persuasive communication. Consumer buying behavior, presentations, and closing are covered. The course is designed to help students currently involved in sales as well as those seeking to improve their communication skills. Sales presentations, video tapes and case studies are used.

3 Sales Management (3) CSU

Lecture 3 hours.
Covers the role of the sales manager in the management of salespersons and associated activities including sales force organization; salesperson selection, training, and supervision; salesperson compensation and expense; sale potentials, territories, and quotas; sales budgets; sales and sales cost analysis; and evaluation of salesperson performance.

11 Fundamentals of Advertising (3) CSU

Lecture 3 hours.
The student is given a working knowledge of advertising's place in the American economy. The fundamentals of advertising media, advertising agencies, consumer behavior, media strategy, the campaign, sales promotion, and public relations are all covered.

21 Principles of Marketing (3) CSU

Lecture 3 hours.
This course introduces students to various activities in the field of marketing. It provides a broad understanding of the principles involved in the distribution of commodities from the producer to the user or consumer. It covers the consumer market, consumerism, packaging and brands, pricing, wholesaling, retailing, sales promotion, personal selling and international marketing. Presentations, case studies and video tapes are used.

31 Retail Merchandising (3) CSU

Lecture 3 hours.
Covers the retail operation in total including a study of store location, store layout, store organization, merchandise buying, pricing, stock planning and retail sales promotion. Personnel duties and responsibilities are also studied including the work of the department manager, store buyer, merchandise manager, publicity director, store superintendent, and the store comptroller.

32 Fashion Merchandising (3) CSU

Prerequisite: Marketing 31 and/or 33 recommended.
Lecture 3 hours.
Covers history and movement of fashion, the manufacturing of fashion apparel and accessories, fashion buying, planning, pricing, merchandising, display, sales promotion and coordination.

33 Retail Buying (3) CSU

Lecture 3 hours.
Studies the principles and techniques of buying for retail organizations, including inventory and stock control procedures, merchandise selection, merchandise planning, use and interpretation of buyers' reports and retail mathematics for buyers.

Cooperative Education -- Work Experience

(See Business - Cooperative Education.)

MATHEMATICS

MATHEMATICS PLACEMENT TEST:
The results of the Mathematics Placement Test or a valid Mathematics Enrollment Authorization Form must be presented at registration or included in the mail-in registration packet in order to enroll in any math course, except Mathematics 105, 110, 112, 145, and 146.

All students who have not completed a college mathematics course must take an appropriate Mathematics Placement Test at the Pierce College Assessment Center (Campus Center). Contact the Assessment Center at (818) 719-6499 for an appointment and sample tests. Review is essential because the test cannot be taken again for six months.

Placement tests are given at four levels: Algebra Readiness, Elementary Algebra, Intermediate Algebra, and Precalculus. Upon completing the test, students are advised of their recommended placement and given an authorization to enroll in that course. Students seeking authorization to enroll in a course other than that recommended by the assessment test must obtain enrollment authorization from a Mathematics Department advisor, if they have satisfied the prerequisite.

Students currently or previously completing a mathematics course at Pierce will be issued an Enrollment Authorization Form by the instructor. Indicated prerequisites for mathematics courses are not waived on the basis of any assessment test scores.

Successful completion of a math course very much depends upon the student's ability to read at the appropriate grade level. It is therefore strongly recommended that a student be eligible to take English 101 before attempting any one of the math courses, 215, 227, 230, 240, or 245, or any math course that has 240 as a prerequisite. A student should be eligible to take English 28 before attempting any other math course.

Mathematics Laboratory for Peer Tutoring

Open to any regularly enrolled student in Pierce College. Mathematics Laboratory is located at Math 1413, 9 a.m. - 2 p.m., Monday - Friday.

105 Arithmetic for College Students (3) (NDA)

Lecture 3 hours.
Reviews the arithmetic essential in college and business. Topics include fractions, decimals, percent, and measurement. The course emphasizes problem solving techniques that are useful in practical situations.

110 Introduction to Algebraic Concepts (5) (NDA)

Lecture 5 hours.
Discusses abstract ideas necessary to understanding algebra and reviews selected topics of arithmetic relevant to algebra. Introduces fundamental notions of algebra including signed numbers, simple equations, and modeling. Includes hands-on laboratories and group work instruction in study skills.

112 Pre-Algebra (3) (NDA)

Lecture 3 hours.
Review of selected topics in arithmetic, including operations on fractions, ratio and proportion, rounding and estimating, geometric formulas. Introduction to algebra, including operations on signed numbers, order of operations and the distributive law, simple equations and modeling.

113 Introduction to Elementary Algebra I (3) (NDA)

Prerequisite: A satisfactory score on the Algebra Readiness Placement test.
Lecture 3 hours.
Mathematics 113 and 114 together are equivalent to Mathematics 115 (see the course description for Mathematics 115). Credit is allowed in only one of Mathematics 115 or the 113/114 combination. Concurrent enrollment in Mathematics 113 and 114 is not permitted.

114 Introduction to Elementary Algebra II (3) (NDA)

Prerequisite: Mathematics 113 with a grade of "C" or better.
Lecture 3 hours.
Mathematics 113 and 114 together are equivalent to Mathematics 115 (see the course description for Mathematics 115). Credit is allowed in only one of Mathematics 115 or the 113/114 combination. Concurrent enrollment in Mathematics 113 and 114 is not permitted.

115 Elementary Algebra (5)

Prerequisite: A satisfactory score on the Algebra Readiness Placement test.
Lecture 5 hours.
Includes operations with algebraic expressions, solutions of linear equations and inequalities, systems of linear equations, quadratic equations, relations and functions and their graphs. No credit given for students who have completed Mathematics 116.

116 Algebra Review (3)

Prerequisite: One year of high school algebra, or equivalent.
Lecture 3 hours.
Reviews the skills of elementary algebra. This course is primarily concerned with manipulative skills, using topics in elementary algebra. No credit given for students who have received credit for Mathematics 115.

120 Plane Geometry (5)

Prerequisite: Mathematics 115, or a satisfactory score on the Elementary Algebra Placement test.
Lecture 5 hours.
Covers an introduction to logic and the construction of a formal proof, the study of plane figures such as triangles, parallelograms and other polygons, and circles. Construction methods with compass and straight edge; computations for area and volume.

125 Intermediate Algebra (5)

Prerequisite: Mathematics 115 with a grade of "C" or better, or a satisfactory score on the Elementary Algebra Placement test.
Lecture 5 hours.
Includes study of polynomials and rational expressions, including exponents and radicals; solution of equations and inequalities; functions and their graphs; systems of equations; exponential and logarithmic functions; Gaussian elimination; sequences; and complex numbers.

145 Technical Mathematics I (3)

Prerequisite: Mathematics 105 or a passing score on the Basic Mathematics Evaluation Test.[1]
Lecture 3 hours.
Provides an introduction to the practical application of mathematics as needed in industry. Fractions, decimals, percentage, square and square roots, constants, solids, etc. are reviewed. Emphasis is on the solution of technical problems beneficial to those engaged in an industrial trade.

146 Technical Mathematics II (3)

Prerequisite: Mathematics 145 or high school algebra with a grade of "C" or better, or a thorough understanding of all material covered in Mathematics 145. (A screening test given at course start.)
Lecture 3 hours.
Reviews algebraic operations. Introduction and study of fundamentals of geometry and trigonometry as related to practical industrial and technical problems.

215 Principles of Mathematics I (for Prospective Elementary School Teachers) (3) CSU (CAN MATH 4)

Prerequisite: Mathematics 120 and 125 with a grade of "C" or better, or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Lecture 3 hours.

Includes problem solving, sets, functions, systems of numeration and number concepts; whole numbers, integers, rational and real numbers, together with their algorithms; use of manipulatives; and an introduction to computers. For students planning to teach in the elementary or junior high school.

227 Statistics (4) UC:CSU (CAN STAT 2)

(Formerly Mathematics 225 and 226)

Prerequisite: Mathematics 125 with a grade of "C" or better, or a satisfactory score on the Intermediate Algebra Placement test.

Lecture 4 hours.

Discusses averages, variability, graphical techniques, probability, hypothesis testing, sampling, estimation, correlation, prediction, and linear regression. Emphasis is on the collection and analysis of data and how inferences about a population are made from a sample.

UC Credit Limit: Combined with Business 15 and Statistics 1, maximum one course.

230 Mathematics for Liberal Arts Students (3) CSU

Prerequisite: Mathematics 120 and 125 with a grade of "C" or better, or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Lecture 3 hours.

Discusses fundamental concepts from selected topics in mathematics, presented within a historical perspective and indicating relationships between mathematics and other fields. Not for majors in mathematics or the physical sciences.

235 Mathematical Analysis for Business and Social Science I (5) *UC:CSU

Prerequisite: Mathematics 125 with a grade of "C" or better or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Lecture 5 hours.

Differential and Integral calculus of algebraic, exponential and logarithmic functions of one variable is studied, including applications, integration techniques and differentials. Probability, compound interest and annuities are also discussed.

236 Mathematical Analysis for Business and Social Sciences II (5) *UC:CSU

Prerequisite: Mathematics 235 with a grade of "C" or better or equivalent.

Lecture 5 hours.

Topics of multivariable calculus including extrema in two and more variables with and without Lagrange Multiplier techniques, and multiple integration methods are studied. Linear systems, matrix algebra and linear programming are also discussed.

238 Calculus for Business and Social Science I (5) CSU

Prerequisite: Mathematics 125 with a grade of "C" or better or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Recommended: Mathematics 245.

Lecture 5 hours.

An introduction to the study of calculus of one variable, differentiation and integration of algebraic and exponential functions, application of differential calculus to modeling and curve sketching, use of integral calculus to determine areas between curves, techniques of integration. Topics of finite mathematics may include an introduction to probability, compound interest and annuities.

239 Calculus for Business and Social Science II (5) CSU

Prerequisite: Mathematics 238 with a grade of "C" or better or equivalent.

Lecture 5 hours.

A continuation of Mathematics 238. Topics of multivariable calculus including extrema in two and more variables with and without Lagrange Multiplier techniques and multiple integration methods are presented as well as separable differental equations. Linear Systems and an introduction to Matrix Algebra are also presented.

240 Trigonometry (3) CSU (CAN MATH 8)

Prerequisite: Mathematics 120 and 125 with a grade of "C" or better, or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Lecture 3 hours.

Centers on a study of the six trigonometric functions, including a study of their graphs, inverses of the functions, solution of triangles, models for periodic phenomena, identities, conditional equations, and polar coordinates.

245 College Algebra (3) **UC:CSU (CAN MATH 10)

Prerequisite: Mathematics 120 and 125 with a grade of "C" or better, or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Lecture 3 hours.

Discusses relations, functions and their graphs, matrices and determinants, theory of equations, permutations, combinations, probability, and conic sections.

255 A Survey of Calculus (5) #UC:CSU

Prerequisite: Mathematics 240 with a grade of "C" or better or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Lecture 5 hours.

Develops differential and integral calculus of a single independent variable. Includes analytic geometry, algebraic, exponential, logarithmic, and trigonometric functions. Provides a brief introduction to the calculus of functions of several variables. Designed for Life Science majors.

260 Precalculus (5) **UC:CSU

Prerequisite: Mathematics 240 with a grade of "C" or better, or equivalent preparation and a satisfactory score on the Intermediate Algebra Placement test.

Lecture 5 hours.

Develops properties of the elementary functions, including exponential, logarithmic and trigonometric functions. Graphing is stressed. Elements of analytic geometry, including conics, and discrete topics, sequences and series and induction, are developed.

UC Credit Limit: Maximum 4 units.

261 Calculus I (5) *UC:CSU (CAN MATH 18)

Prerequisite: Mathematics 260 with a grade of "C" or better, or equivalent preparation and a satisfactory score on the Precalculus Placement test.

Lecture 5 hours.

Begins a sequence of three courses in the calculus. Coverage includes limits, continuity, differentiation and some integration of algebraic and trigonometric functions. Applications of the calculus include related rates, maxima and minima of functions of one variable, calculation of areas, volumes, arc length and growth.

262 Calculus II (5) *UC:CSU (CAN MATH 20)

Prerequisite: Mathematics 261 with a grade of "C" or better or a score of 3 or more on the High School Advanced Placement Calculus AB test.

Lecture 5 hours.

Continues the study of calculus begun in Mathematics 261 with attention given to differentiation and integration of trigonometric, inverse trigonometric, logarithmic and exponential functions. Techniques of integration are treated as well as functions expressed in polar and parametric forms. Infinite series and expansion of functions into series and complete the course.

263 Calculus III (5) UC:CSU (CAN MATH 22)

Prerequisite: Mathematics 262 with a grade of "C" or better or a score of 3 or more on the High School Advanced Placement Calculus BC test.

Lecture 5 hours.

Concludes the study of calculus begun in Mathematics 261. The concepts of the derivative and the definite integral are extended to functions of several variables in the form of partial derivatives and multiple integrals. In addition, the theory of limits, derivatives, and integrals are extended to vector-valued functions. Topics in vector calculus such as vector fields, line integrals, divergence and curl, Green's, Stoke's, and the Divergence theorems are treated.

270 Linear Algebra (3) UC:CSU (CAN MATH 26)

Prerequisite: Mathematics 262 with a grade of "C" or better. Mathematics 263 is strongly recommended[1].

Lecture 3 hours.

Covers vector spaces, linear transformations and matrices, matrix algebra, determinants, solutions of systems of equations, eigenvectors and eigenvalues.

275 Ordinary Differential Equations (3) UC:CSU(CAN MATH 24)

Prerequisite: Mathematics 263 with a grade of "C" or better.

Lecture 3 hours.

Includes an introduction to first, second and higher order linear differential equations, operator methods, series solutions, the gamma function, Laplace transform techniques, Boundary value problems, and numerical methods with an emphasis on applications.

185 Directed Study — Mathematics (1) †UC:CSU RPT 2

285 Directed Study — Mathematics (2) †UC:CSU

385 Directed Study — Mathematics (3) †UC:CSU

Conference 1 hour per unit.

Allows students to pursue Directed Study in Mathematics on a contract basis under the direction of a supervising instructor.

[1]See "Note" under main head of Mathematics regarding a "C" grade in course prerequisites and enrollment procedures.

**UC Credit Limit: Combined with Mathematics 261 and 262, maximum 2 courses.*

***UC Credit Limit: Combined with Mathematics 260, maximum 4 units.*

¤UC Credit Limit: No credit for Mathematics 255 if taken after Mathematics 261.

MEDIA ARTS

Media Arts courses are listed separately under the following headings:

Cinema
Journalism
Photography
Public Relations

METEOROLOGY

3 Introduction to Weather and Climate (3) UC:CSU

(Same as Geography 3. Credit not given for both courses.)

Lecture 3 hours.

Studies the nature and causes of weather phenomena including wind,clouds, rain, lightning, tornadoes and hurricanes, solar energy, composition of the atmosphere, causes of air pollution, weather modification, the impact of weather on the human environment, and introduction to climate.

4 Introductory Meteorology Laboratory (2) UC:CSU

Prerequisite: Geography 3 or Meteorology 3 or concurrent enrollment in either course.

Lecture 1 hour; laboratory 2 hours.

Stresses practical use of meteorological instruments and their observation. Practical exercises in surface observations; upper air observations; weather codes; and weather map construction and analysis.

Normally offered in the Spring semester only.

185 Directed Study — Meteorology (1) †UC:CSU RPT 2

285 Directed Study — Meteorology (2) †UC:CSU

385 Directed Study — Meteorology (3) †UC:CSU

Prerequisite: Geography 3.

Conference 1 hour per unit.

Allows students to pursue Directed Study in Meteorology on a contract basis under the direction of a supervising instructor.

MICROBIOLOGY

1 Introductory Microbiology (5) *UC:CSU (CAN BIOL 14)

NOTE: A total of 5 units given for Microbiology 1 and 20.

Prerequisite: Biology 3 or 6 and Chemistry 51 or equivalent with a grade "C" or better.

Lecture 3 hours; laboratory 6 hours.

Presents fundamentals of microbiology. Includes history, survey of microbes, morphology, metabolism, genetics, sterilization and disinfection, as well as host-pathogen relationships and fundamentals of virology and immunology. Laboratory techniques stress handling, isolating, staining, enumerating and identifying microbes. Students explore microbes in air, water soil, and food with particular emphasis on medical microbiology and the major etiological agents of disease.

20 General Microbiology (4) *UC:CSU

NOTE: A total of 5 units given for Microbiology 1 and 20.

Prerequisite: Biology 3 or 6 and Chemistry 51 or equivalent with a grade of "C" or better.

Lecture 3 hours; laboratory 3 hours.

Presents the basic principles of microbiology including its history, survey of microbes, microbial culture, metabolism and genetics, common infectious diseases, host-pathogen relationships, public health factors in disease as well as elementary immunology. Techniques for aseptic transfer, staining, isolation, identification and enumeration of microbes are stressed in the laboratory. Designed for nursing, physical therapy, animal health science and pre-optometry students.

**UC Credit Limit: Combined Microbiology 1 and 20, maximum one course.*

MODERN LANGUAGES

Modern Language courses are listed separately under the headings of:

American Sign Language
French
Italian
Japanese
Spanish

MUSIC

Check with the Department or Counseling Office for transferability of courses to four-year institutions and for unit limitations of courses accepted by both University of California and CSUN. All Music Majors are required to enroll in a performance in a performing group each semester (Music 501, 521, 531, 541, 561, 563, 721, 741, 745). Musical performance classes study different literature each semester. Also, musical growth is in no sense completed in a single semester. For these reasons it is educationally sound for a student to repeat a musical performance course.

101 Fundamentals of Music (3) UC:CSU

Lecture 3 hours.

Consists of a study of the rudiments of musical notation, scales, keys, intervals, common musical terms, ear training and beginning sight singing. Designed for non-music majors.

111 Music Appreciation I (3) UC:CSU

Lecture 3 hours.

Provides a survey of music considering the formal development of musical ideas and their relationship to man's cultural life.

112 Music Appreciation II (3) UC:CSU

Prerequisite: Music 111.

Lecture 3 hours.

Offers a continuation of Music 111, stressing the forms and styles of music.

†UC: See page 78.

121 Music History and Literature I (3) UC:CSU

Prerequisite: Music 201 or equivalent.
Lecture 3 hours.
Traces the history and development of musical thought from Gregorian Chant to the dawn of Romanticism with Beethoven. Emphasizes extensive listening through records, radio and concerts. Designed primarily for music majors and those with considerable musical background.

Offered Fall semesters.

122 Music History and Literature II (3) UC:CSU

Prerequisite: Music 201 or equivalent.
Lecture 3 hours.
Studies styles and forms beginning with the great Romantic composers and concluding with the music of the present day. Designed primarily for music majors and those with some musical background.

Offered Spring semesters.

152 Current Musical Events (1) CSU RPT 3

Recommendeded concurrent enrollment in Humanities 89.
Lecture 2 hours.
Enriches the student's musical experiences through opportunities to listen to a wide variety of music. Consists of demonstrations and lectures by faculty, students, and guest artists. Offers previews of current concerts.

Attendance at local concerts required.

161 Introduction to Electronic Music (3) CSU

Prerequisite: Basic piano keyboard skills and knowledge of music fundamentals.
Lecture 2 hours; laboratory 2 hours.
This exploratory course emphasizes the application of musical acoustics to the electro-acoustic music synthesizer. Technical, compositional, and performance skills utilizing voltage controlled and digital synthesizers, MIDI application, and recording techniques are introduced and developed.

181 Applied Music I (.5) *UC:CSU

Prerequisite: Concurrent enrollment in a harmony class(Music 201, 202, 203 or 223).
Lecture 1 hour.
Preparation and performance of musical selections. Lecture and discussion of various aspects of public performance.

182 Applied Music II (.5) *UC:CSU

Lecture 1 hour.
Continuation of Music 181.

183 Applied Music III (.5) *UC:CSU

Lecture 1 hour.
Continuation of Music 182.

184 Applied Music IV (.5) *UC:CSU

Lecture 1 hour.
Continuation of Music 183.

200 Introduction to Music Theory (4) UC:CSU

Co-requisite: A major performing ensemble (Music 501, 521, 531, 541, 561, 563, 721, 741, 745.
Lecture-Performance 5 hours.
Prepares the music majors to qualify for Music 201 and Music 211 by an intensive study of the notational structure of music, of the elements of singing, and ear training, and of elementary piano.

201 Harmony I (3) UC:CSU

Prerequisite: Music 101 or equivalent with a grade of "C" or better. Concurrent enrollment in a musicianship class (Music 211, 212, 213 or 214), and a major performing ensemble (Music 501, 561, 721, or 745).
Lecture 3 hours.
Concerns diatonic harmony which includes a study of triads and their inversions. Introduces nonchordal tones through harmonization of simple given parts. Includes harmonic analysis.

202 Harmony II (3) UC:CSU

Prerequisite: Music 201 and 211 with grades of "C" or better. Concurrent enrollment in musicianship (Music 212, 213, 214), and a major performing ensemble (Music 501, 561, 721, 745).
Lecture 3 hours.
Continues Music 201, including a study of secondary triads, modulation, all forms of dominant harmony, and the sequence.

203 Harmony III (3) UC:CSU

Prerequisite: Music 202 and 212 with grades of "C" or better. Concurrent enrollment in musicianship (Music 213 or 214) and a major performing ensemble (Music 501, 561, 721, 745).
Lecture 3 hours.
Continues Music 202 and is primarily a study of nondominant seventh chords, the Neopolitan and augmented sixth chords and other chromatic harmonies.

211 Musicianship I (2) UC:CSU

Prerequisite: Music 101 or equivalent with a grade of "C" or better.
Lecture-Performance 3 hours.
Development of sight reading, dictation and keyboard skills.

212 Musicianship II (2) UC:CSU

Prerequisite: Music 211 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 211.

213 Musicianship III (2) UC:CSU

Prerequisite: Music 212 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 212.

214 Musicianship IV (2) UC:CSU

Prerequisite: Music 213 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 213.

221 Counterpoint I (3) UC:CSU

Prerequisite: Music 201 and 211 with grades of "C" or better.
Lecture 3 hours.
Covers two and three-part modal counterpoint based upon sixteenth century polyphony.

222 Counterpoint II (3) UC:CSU

Prerequisite: Music 201 and 211 with grades of "C" or better.
Lecture 3 hours.
Covers two and three-part tonal counterpoint based upon the polyphony of the Baroque period.

Offered in the Spring semesters.

223 20th Century Compositional Techniques (3) UC:CSU

Prerequisite: Music 203.
Lecture 3 hours.
Provides an opportunity for the gifted and creative student to experiment with new harmonic techniques of the 20th century. Includes an introduction to analytical techniques and principles of musical composition.

225 Basic Conducting (2) *UC:CSU RPT 2

Prerequisite: Ability to read a musical score.
Lecture-Performance 3 hours.
Considers the basic problems in conducting both choral and instrumental musical ensembles. Explores various conducting responsibilities including rehearsal technique, beat patterns, cueing and expressive gestures.

226 Choral Conducting (2) CSU

Prerequisite: Ability to read a musical score.
Lecture-Performance 3 hours.
Considers the problems in the conducting of community singing and choral works suitable for school and church choral groups.
Studies the techniques of the baton and the use of the left hand for expressive purposes.

231 Orchestration and Arranging I (3) UC:CSU (CAN MUS 22)

Prerequisite: Music 201.
Lecture 3 hours.
Gives the student an introduction to the instruments of the orchestra and band and how to score for them in various combinations.

232 Orchestration and Arranging II (3) UC:CSU (CAN MUS 24)

Prerequisite: Music 231.
Lecture 3 hours.
Continuation of Music 231. Offers the student an opportunity to advance the techniques learned in Music 231.

241 Music Notation and Copying I (1) CSU

Laboratory 1 hour.
Affords practical experience in the techniques of notating and copying music.

242 Music Notation and Copying II (1) CSU

Prerequisite: Music 241 with a grade of "C" or better.
Laboratory 1 hour.
Continuation of Music 241.

243 Music Notation and Copying III (1) CSU

Laboratory 1 hour.
Continuation of Music 242.

244 Music Notation and Copying IV (1) CSU

Laboratory 1 hour.
Continuation of Music 243.

250 Music Performance Workshop (.5) CSU RPT 3

Lecture-Performance 3 hours.
Preparation and performance of musical selections. Lecture and discussion of various aspects of public performance.

251 Jazz Improvisation Workshop (.5) *UC:CSU RPT 3

Prerequisite: Ability to play a jazz instrument or voice.
Lecture-Performance 3 hours.
Studies scale and chordal structures involved in jazz improvisation. Includes practical application in small group performances.

261 Electronic Music Workshop (3) CSU RPT 2

Prerequisite: Music 161 with a grade of "C" or better.
Lecture 2 hours; Laboratory 2 hours.
Techniques introduced in Music 161 are incorporated in other production skills, which include signal processing, mixing and DAT recording as well as traditional reel-to-reel recording. Advanced synthesis techniques will be taught (sampling and cross/wave), + SMPTE time code uses.

299 Music Honors (1) †UC:CSU RPT 3

Prerequisite: Music 121, 122, and 203.
Lecture 3 hours.
Provides the gifted student in music an opportunity for concentrated independent study in selected areas under the direct supervision of an instructor. Presents a course of study through a series of projects designed to increase the students' knowledge of those aspects of music most pertinent to their individual interests and talents.

301 Keyboard Harmony I (1) *UC:CSU

Prerequisite: Music 101 or equivalent.
Lecture 1 hour.
Emphasis will be on work using both hands, on harmonizing anthem-type melodies and on using 3-note chords in the right hand with single bass notes in the left hand. The student will also perform florid melodies using single notes in the right hand with 3-note chords in the left hand.

302 Keyboard Harmony II (1) *UC:CSU

Prerequisite: Music 301 with a grade of "C" or better, or equivalent.
Lecture 1 hour.
This course is a continuation of student development of keyboard skills. Emphasis will be on left hand harmonic patterns such as Alberti bass, "waltz" bass, and two part (treble and bass) harmonizations. This level is to include secondary seventh chords (and inversions), secondary dominants (and inversions), as well as transient and real modulatory exercises.

303 Keyboard Harmony III (1) *UC:CSU

Prerequisite: Music 302 with a grade of "C" or better, or equivalent.
Lecture 1 hour.
This course is a continuation of student development of keyboard skills, using more complex piano idioms, harmonizations to include the augmented sixth chord family, the Neapolitan sixth, chromaticism, remote key movement and relationships, as well as some early 20th Century techniques, such as parallelism, chords in fourths, polytonal passages, etc.

321 Elementary Piano I (2) *UC:CSU

Lecture-Performance 3 hours.
Consists of music reading, introduction to scale playing, use of piano pedals, sight reading, memorization, terminology, and theory as related to the music studied.

322 Elementary Piano II (2) *UC:CSU

Prerequisite: Music 321 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 321.

323 Elementary Piano III (2) *UC:CSU

Prerequisite: Music 322 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 322.

324 Elementary Piano IV (2) *UC:CSU

Prerequisite: Music 323 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 323.

341 Intermediate Piano (2) *UC:CSU RPT 3

Prerequisite: Elementary Piano.
Lecture-Performance 3 hours.
Continues the study of theoretical music, fundamentals, ear training, and sight reading. Introduces compositions stressing scales, chords, arpeggios and harmonic structure of music, in an interpretive manner. Emphasizes style and interpretation.

351 Piano Ensemble (1) *UC:CSU RPT 3

Prerequisite: Music 341.
Laboratory 2 hours.
Provides the opportunity for ensemble experience through the performance of literature for two pianos, four and eight hands. Particular emphasis on style, interpretation and the development of sight reading.

411 Elementary Voice I (2) *UC:CSU

Lecture-Performance 3 hours.
Concentrates on general, basic fundamentals of singing, using vocal exercises, and simple songs. Emphasis on developing an understanding of the singing voice, the body as a musical instrument, and the vocal potential of each student. Songs used implement and illustrate vocal growth and development.

412 Elementary Voice II (2) *UC:CSU

Prerequisite: Music 411 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 411.

413 Elementary Voice III (2) *UC:CSU

Prerequisite: Music 412 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 412.

414 Elementary Voice IV (2) *UC:CSU

Prerequisite: Music 413 with a grade of "C" or better.
Lecture-Performance 3 hours.
Continuation of Music 413.

441 Song Repertoire (2) *UC:CSU RPT 3

Prerequisite: Music 414.
Lecture 1 hour; laboratory 2 hours.
Offers to the traditional voice student the opportunity to study and perform a varied repertoire of musicals, art songs and operas.

501 College Choir (.5) *UC:CSU RPT 3

Open to all students.
Lecture 3 hours.
The study, preparation, and performance of standard choral music and popular selections. Basic singing techniques and music reading are included.

531 Philharmonic Choir (.5) *UC:CSU RPT 3

Lecture 3 hours.
Study and performance of choral literature from all stylistic periods. Emphasis is placed on major choral works.

561 Chamber Chorale (.5) *UC:CSU RPT 3

Prerequisite: Audition.
Lecture 3 hours.
Concerns the study and performance of musical literature of small chamber choral groups from the sixteenth century to the present.

†UC: See page 78.

571 Jazz Choir (.5) CSU RPT 3

Prerequisite: Audition.
Lecture-Performance 4 hours.
Offers practical experience in singing jazz, folk and rock music in small ensemble. Recording studio techniques will be explored.

601 Brass Instrument Instruction I (2) *UC:CSU

Lecture-Performance 3 hours.
Offers instruction in trumpet, trombone, tuba and French horn. Recommended for students interested in learning an instrument, instrumental writing or how to teach instrumental music.

602 Brass Instrument Instruction II (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 601.

603 Brass Instrument Instruction III (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 602.

604 Brass Instrument Instruction IV (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 603.

611 String Instrument Instruction I (2) *UC:CSU

Lecture-Performance 3 hours.
Offers beginning and intermediate instruction in violin, viola, cello and bass. Recommended for students interested in learning an instrument, instrumental writing, how to teach instrumental music.

612 String Instrument Instruction II (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 611.

613 String Instrument Instruction III (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 612.

614 String Instrument Instruction IV (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 613.

621 Woodwind Instrument Instruction I (2) *UC:CSU

Lecture-Performance 3 hours.
Offers instruction in flute, oboe, clarinet and bassoon. Recommended for students interested in learning an instrument, instrumental writing, or how to teach string and wind instrument players.

622 Woodwind Instrument Instruction II (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 621.

623 Woodwind Instrument Instruction III (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 622.

624 Woodwind Instrument Instruction IV (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 623

650 Beginning Guitar (2) *UC:CSU

Lecture-Performance 3 hours.
Concerns beginning guitar skills with emphasis on learning to read music on the guitar, up to the fifth position for the left hand. Right hand technique will be finger, not pick oriented; and the course is a perfect introduction to either classical, commercial, or folk guitar playing.

651 Classical Guitar I (2) *UC:CSU

Prerequisite: Possession of own guitar and Music 650 or equivalent. Ability to read music.
Lecture-Performance 3 hours.
Provides basic instruction in Classical Guitar playing at the beginning level. Includes appropriate exercises to develop technical facility, material for sightreading, study of basic chords, and repertoire.

652 Classical Guitar II (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 651.

653 Classical Guitar III (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 652.

654 Classical Guitar IV (2) *UC:CSU

Lecture-Performance 3 hours.
Continuation of Music 653.

661 Commercial Guitar I (2) CSU

Prerequisite: Music 650 or appropriate instruction, possession of own instrument.
Lecture 1 hour; laboratory 2 hours.
Designed to give the guitarist experience in playing melody, accompaniments, and performing songs with simultaneous chords and melody. Styles covered include jazz, jazz-fusion, rock and bossa-nova. Techniques include scales and sight reading up to the fifth position in keys up to three flats and three sharps.

662 Commercial Guitar II (2) CSU

Prerequisite: Music 661 or appropriate private instruction, possession of own instrument.
Lecture 1 hour; laboratory 2 hours.
Continuation of Music 661.

663 Commercial Guitar III (2) CSU

Prerequisite: Music 662 or appropriate private instruction, possession of own instrument.
Lecture 1 hour; laboratory 2 hours.
Continuation of Music 662.

664 Commercial Guitar IV (2) CSU

Prerequisite: Music 663 or appropriate private instruction, possession of own instrument.
Lecture 1 hour; laboratory 2 hours.
Continuation of Music 663.

705 Chamber Music (.5) *UC:CSU RPT 3

Lecture-Performance 3 hours.
Provides experience in typical chamber music and chamber orchestra combinations. Open to qualified instrumentalists, including pianists, string and wind instrument players.

721 Orchestra (1) *UC:CSU RPT 3

Lecture-Performance 4 hours.
Concerns reading and detailed study of the standard repertoire symphonic music. Provides experience in interpreting music of various styles and performing for various college functions.

741 Band (1) *UC:CSU RPT 3

Prerequisite: Ability to play a band instrument.
Lecture-Performance 4 hours.
Includes the study and performance of standard works for instrumental ensembles.

745 Symphonic Band (.5) *UC:CSU RPT 3

Prerequisite: Ability to play a wind or percussion instrument.
Lecture-Performance 6 hours.
Explores contemporary and traditional band literature with emphasis on performance-related experiences. Provides opportunities for solo performances, section rehearsals, and large ensemble rehearsal and performance.

755 Brass Ensemble (.5) *UC:CSU RPT 3

Lecture-Performance 3 hours.
Provides rehearsal and performance experience in a wide variety of brass literature.

765 Percussion Ensemble (.5) UC:CSU RPT 3

Laboratory 3 hours.
Provides the student with the opportunity to learn the principles of percussion ensemble literature in the symphonic and commercial fields. Public performances will be given.

781 Studio Jazz Band (.5) CSU RPT 3

Prerequisite: Ability to play a jazz instrument.
Lecture-Performance 4 hours.
Offers practical experience playing in a large dance band. Also, reading and rehearsing of standard musical arrangements will emphasize intonation, rhythmic accuracy, artistic expression, and improvisation.

911 Cooperative Education — Music (1) CSU RPT 3

921 Cooperative Education — Music (2) CSU RPT 3

931 Cooperative Education — Music (3) CSU RPT 3

941 Cooperative Education — Music (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Any or all courses combined, maximum 12 units.*

NATURAL RESOURCES MANAGEMENT

(See Agriculture course listings 900-999.)

NUMERICAL CONTROL

(See listing under Industrial Technology - Numerical Control.)

NURSING

Anatomy, Physiology, Microbiology, Psychology, Physiology 18, Sociology, and English 101 appear in the nursing curriculum in a particular sequence. A student must complete these courses either prior to or during the semester in which they are scheduled (See "Nursing: Associate in Arts Degree").

400 Fundamentals of Nursing (4) CSU

Prerequisite: Approval to enter the Nursing Program. Completion of or concurrent enrollment in Anatomy 1 and Psychology 1 or 6. Must show proof of current Basic Life Support card (CPR-BLS "C"). Completion of Anatomy and Physiology is recommended.

Lecture 2 hours; laboratory 6 hours.

Introduces the student to the nursing process and Gordon's Functional Health Patterns as they relate to the care of the adult client. Basic clinical skills and related theory are presented. Encompasses physical, psychosocial, cultural, developmental, and legal aspects as related to nursing. Includes clinical experience.

401 Client Care Seminar I (1) CSU

Prerequisite: Enrollment in Nursing Program.

Lecture 1 hour.

An elective, but strongly recommended instructor guided course. Emphasizes nursing process and Gordon's Functional Health Patterns to enhance planning of nursing care and performance of nursing skills. Selected patient care experiences and nursing skills will be used.

402 Preparation for Drug Therapy (1) CSU

Prerequisite: Acceptance into the Nursing Program.

Lecture 1 hour.

Introduces basic knowledge and skills required for safe and effective drug therapy. Includes mathematics used in calculation of drug dosage. Specific drug classifications are discussed in conjunction with Gordon's Functional Health Patterns. Nursing process serves as a framework in the application of content to client care.

403 Medical-Surgical Nursing I (5) CSU

Prerequisite: Completion of Nursing 400, 402, 407 and 408 (or their equivalent) and Anatomy 1 with a grade of "C" or better. Completion of or concurrent enrollment in Physiology 1 and Microbiology 1 or 20. Completion of English 101 is recommended.

Lecture 2 hours; laboratory 9 hours.

Introduces theory and concepts central to the practice of medical- surgical nursing, emphasizing short-term acute health problems and perioperative care. Encompasses physical, psychosocial, cultural, developmental, and legal aspects. Continues to expand knowledge of functional health patterns and the use of nursing process. Clinical experience is focused on multiple primary care assignments.

404 Maternity Nursing (4) CSU

Prerequisite: Completion of the first year of the Nursing Program (or its equivalent or BRN referral), Physiology 1, Microbiology 1 or 20 with a grade of "C" or better. Completion of or concurrent enrollment in Physiology 18 and Sociology 1 or 2 or Anthropology 102.

Lecture 2 hours; laboratory 6 hours.

Studies the reproductive process and its effect on health and family life within the framework of the nursing process and Gordon's Functional Health Patterns. Covers the normal maternity cycle, common problems, and the newborn. Encompasses psychosocial, cultural, developmental, legal, and ethical aspects of maternity care. Women's health care is discussed. Includes clinical experience.

405 Psychiatric Nursing (4) CSU

Prerequisite: Completion of the first semester of the Nursing Program (or its equivalent or BRN referral) and Psychology 1 or 6 with a grade of "C" or better. Completion of English 101 is recommended.

Lecture 2 hours; laboratory 6 hours.

Introduces the concepts of psychiatric nursing utilizing Gordon's Functional Health Patterns and the nursing process. Presents current theory and practice in the care of the mentally ill. Psychosocial, physical, legal and illness stressors are discussed as they relate to the individual and family. A variety of clinical experiences are provided in the acute psychiatric setting.

406 Medical-Surgical Nursing II (5) CSU

Prerequisite: Completion of the first year of the Nursing Program (or its equivalent), Physiology 1 and Microbiology 1 or 20 with a grade of "C" or better. Completion of or concurrent enrollment in Physiology 18 and Sociology 1 or 2, or Anthropology 102.

Lecture 2 hours; laboratory 9 hours.

Builds upon previously learned concepts of medical-surgical nursing. Emphasizes the chronically-ill adult and gerontic client with concurrent acute health problems. Utilizes the Functional Health Patterns as a basis for assessment and implementation of the nursing process. Clinical experiences include multiple primary care assignments and introduces management of clients in small groups in the acute care setting.

407 Gerontic Nursing (3) CSU

Prerequisite: Approval to enter the Nursing Program. Completion of or concurrent enrollment in Psychology 1 or 6. Must show proof of current Basic Life Support card (CPR-BLSC).

Lecture 1 hour; laboratory 6 hours.

Introduces the gerontic client including physical, psychological, social, spiritual, and intellectual aspects. Emphasizes interrelatedness of Gordon's Functional Health Patterns and nursing process, growth and development, and health problems in the aging client. Includes clinical experience.

408 Mental Health Nursing (1) CSU

Prerequisite: Acceptance into the Nursing Program.

Lecture 1 hour.

Facilitates assessment and promotion of mental health perspectives across the life span. Introduces the concepts of wellness and holistic health care while focusing on community mental health. Emphasizes nursing process and identification of behaviors which represent functional and dysfunctional health patterns as defined by Gordon. Examines multiple factors influencing mental health such as biological, sociocultural, or psychological components.

414 Medical-Surgical Nursing III (5) CSU

Prerequisite: Completion of the third semester of the Nursing Program (or its equivalent).

Lecture 2 hours; laboratory 9 hours.

Advanced theories and concepts of adult medical-surgical nursing with emphasis on complex and acute health problems. Includes physical, psychosocial, cultural, developmental, and legal aspects. Provides in-depth clinical experience utilizing functional health patterns and nursing process. Stresses management experience focusing on the staff nurse role.

415 Pediatric Nursing (4) CSU

Prerequisite: Completion of the third semester of the Nursing Program (or its equivalent or BRN referral).
Lecture 2 hours; laboratory 6 hours.
Discusses concepts of Pediatric Nursing within the framework of Gordon's Functional Health Patterns and the nursing process. Emphasis is placed upon health problems and the pediatric client's unique reaction to hospitalization. Topics include growth and development from infancy through adolescence and adaptation of nursing techniques for the pediatric client/family. Includes clinical experience.

417 Client Care Seminar IV (1) CSU

Prerequisite: Concurrent enrollment in the fourth semester of the Nursing Program.
Lecture 1 hour.
An elective, but strongly recommended instructor guided course for senior nursing students. Uses tutorial study, independent learning, and nursing skills practice to provide enrichment in advanced clinical application of nursing process and Gordon's functional health patterns.

424 Client Care Seminar II (1)

Prerequisite: Concurrent enrollment in the second semester of the Nursing program.
Lecture 1 hour.
An elective but strongly recommended instructor guided course which emphasizes nursing process and Gordon's Functional Health Patterns to enhance planning of nursing care. Provides opportunities for client teaching in simulated role-playing experiences. Selected nursing skills practice will be provided.

441 History, Trends, and Issues of Nursing (1) CSU

Prerequisite: Concurrent enrollment in the fourth semester of the Nursing Program.
Note: Class meets every other week.
Lecture 1 hour.
Examines current and relevant nursing issues within the context of historical development of organized nursing. Includes legal rights and responsibilities and economic and educational issues as they affect the emergence of the modern nurse. Discusses the nurse's role as a contributing member of the discipline and the community.

442 Role Transition to RN (1) CSU

Prerequisite: Approval to enter the Nursing Program. Must currently be Licensed Vocational Nurse, foreign nurse graduate or a transfer nursing student.
Lecture 1 hour.
Orients the advanced placement nursing student to the College and to the Nursing Program. Discusses the roles and responsibilities of the registered nurse. Instruction focuses upon the application of nursing process, its components, and the use of Gordon's Functional Health Patterns for assessment. Includes development of care plans for clients in a variety of settings.

444 Client Care Seminar III (1) CSU

Prerequisite: Concurrent enrollment in the third semester of the Nursing Program.
Lecture 1 hour.
An elective, but strongly recommended instructor guided course to facilitate enrichment, tutorial study, the utilization of independent learning, and nursing skills practice.

450 Clinical Nursing Preceptorship (3)

Prerequisite: Completion of the second or third semester of the Nursing Program or the equivalent.
Laboratory 8 hours.
Elective nursing course to enhance student skills and knowledge, improve clinical performance, and increase confidence in the work setting. An intensive clinical experience in which the student is paired with a staff nurse in an acute care facility. Clinical topics include management and communication.

463 Introduction to Nursing (.5)

Lecture .5 hour.
Designed for the prenursing major or student considering Nursing as a career. An introduction to nursing and the Nursing Program at L. A. Pierce College.

185 Directed Study – Nursing (1) RPT 2

285 Directed Study – Nursing (2)

385 Directed Study – Nursing (3)

Conference 1 hour per unit.
Allows students to pursue Directed Study in Nursing under the direction of a supervising instructor.

911 Cooperative Education – Nursing (1) CSU RPT 3

921 Cooperative Education – Nursing (2) CSU RPT 3

931 Cooperative Education – Nursing (3) CSU RPT 3

941 Cooperative Education – Nursing (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

OCEANOGRAPHY

1 Introduction to Oceanography (3) UC:CSU

Lecture 3 hours.
Introduces the student to the general field of oceanography, including a study of the features of the sea floor, the chemical and physical properties of sea water, currents, tides, waves and their effects on marine organisms. Special reference will be made to the Southern California environment and problems of man and the sea.

2 Introduction to Marine Biology (3) *UC:CSU

Lecture 2 hours; laboratory 3 hours.
This course is designed to be taught at a marine biology field station and maximizes the opportunities afforded by field study. The lecture, laboratory and field study are integrated to examine the biology of marine plants and animals. Emphasis is placed on the interactions among species which determine their distributions and the organization of communities.

10 Physical Oceanography Laboratory (2) UC:CSU

Prerequisite: Oceanography 1 or concurrent enrollment.
Lecture 1 hour; laboratory 2 hours.
Offers an opportunity to learn skills and techniques of the oceanographer through laboratory, beach and dockside field work, and work cruises aboard a research vessel. Includes the study of nautical charts, instrumentation, and oceanographic processes such as sedimentation, effects of winds, currents, tides, and determination of water quality. Students are required to attend three field trips.

12 Lectures in Marine Biology (3) *UC:CSU

Enrollment in Oceanography 14 is strongly recommended.
Lecture 3 hours.
Introduces the student to the biology of the marine environment and examines intertidal, nearshore, oceanic and deep sea communities. Includes the study of seashore plants, as well as plankton, invertebrates, fishes and marine mammals. Special attention is given to the interrelationships of organisms in communities and the influence of humans on marine wildlife resources.

14 Marine Biology Laboratory (2) *UC:CSU

Prerequisite: Oceanography 12 or concurrent enrollment.
Lecture 1 hour; laboratory 3 hours.
A laboratory and field course which introduces the student to a variety of marine lifeforms and communities. Strong emphasis is placed on relating the biology and adaptations of marine organisms to their ecology. Field studies concentrate on recognition of natural communities and understanding of the functional species relationships within them. Field trips include oceanographic cruises as well as visits to several different intertidal and nearshore communities.

185 Directed Study — Oceanography (1) †UC:CSU RPT 2

285 Directed Study — Oceanography (2) †UC:CSU

385 Directed Study — Oceanography (3) †UC:CSU

Prerequisite: Oceanography 1 or 12.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Oceanography on a contract basis under the direction of a supervising instructor.

**UC Credit Limit: Oceanography 2, 12, and 14 combined, maximum 5 units.*

OFFICE ADMINISTRATION

1 Typewriting/Keyboarding I (3)

Lecture 2 hours; laboratory 3 hours.
Develops fundamental skills in the operation of the typewriter. Permits students to achieve a typing speed of at least 30 gross words a minute for 5 minutes with no more than 5 errors.

2 Typewriting/Keyboarding II (3) CSU

Prerequisite: Office Administration 1 or 9 with a grade of "C" or better and/or the ability to type 30 words a minute for 5 minutes with no more than 5 errors. Not open to students who have credit for 4 semesters of typewriting in any other school.
Lecture 2 hours; laboratory 3 hours.
Develops speed and accuracy in typing as well as training in letter placement, manuscripts, and tabulations. Permits students to achieve a typing speed of at least 45 words a minute for 5 minutes with no more than 5 errors. Students should enroll in Office Administration 9 if they do not meet the requirements for admission to Office Administration 2.

9 Typewriting/Keyboarding Improvement (1) RPT 1

Prerequisite: Completion of a beginning typing course with a grade of "D" or better.
Laboratory 3 hours.
Improves typing techniques, speed, and accuracy through timed writings, corrective drills, and production problems. Students may enroll for two semesters, but the semesters may not be consecutive. This course may be taken concurrently with Office Administration 2 if the student needs additional speed and/or accuracy building.

23 Legal Secretarial Procedures I (5)

Prerequisites: Office Administration 2 and 71.
Lecture 5 hours.
Teaches the spellings and meanings of approximately 400 legal words. Offers training in the preparation of personal injury, probate, and dissolution cases. Teaches office procedures in court filings and teaches skill in transcribing legal materials using transcribing machines.

Offered in the Fall semester only.

24 Legal Secretarial Procedures II (5)

Prerequisite: Office Administration 23 or equivalent.
Lecture 5 hours.
Offers training in the preparation of landlord and tenant, corporation, and criminal cases. Simulates on-the-job training with emphasis on working under pressure and on decision making. Continues to develop legal vocabulary and speed in transcribing legal pleadings.

Offered in the Spring semester only.

31 Business English (3)

Prerequisite: Students must be eligible for English 21. Concurrent enrollment in Office Administration 34 recommended.
Lecture 3 hours.
Develops competency in the fundamentals and mechanics of correct English usage, including grammar, punctuation, capitalization, number style, sentence structure, and written expression. Emphasizes appropriate methods of expression through sentence construction, paragraph development, and functional composition.

32 Business Communications (3) CSU

Prerequisite: Completion of Office Administration 31, English 28, or equivalent with a grade of "C" or better.
Lecture 3 hours.
Complete communications skills course for practical business applications. Stresses problem-solving approach in composition of business memoranda, letters, reports, employment communications, and other documents. Also provides opportunity to improve speaking and listening skills.

34 Business Vocabulary and Spelling (2)

Lecture 2 hours.
Helps students improve spelling ability and enrich vocabulary. Emphasizes the habit of using the dictionary.

39 Word Processing: Keyboarding and Operations (3) RPT 2

Prerequisite: Knowledge of keyboarding and good English skills.
Lecture 2 hours; laboratory 3 hours.
Prepares students to become proficient in the use of word processing software and equipment. Develops skills and knowledge in the operation of Microsoft Word for Windows or another contemporary high-end program.

58 Word Processing: Office Simulation (5)

Prerequisite: Office Administration 39 or 84. Ability to type.
Recommended: Office Administration 83.
Lecture 5 hours.
Introduces students to Novell network administration with emphasis on DOS, network hardware and software, creation of user logins, and use of network supervisory utilities. Explores electronic mail, computer messaging, and document transfer via computer with or without a modem. Surveys windows and programs designed for that graphical interface. Presents guidelines for microcomputer equipment selection.

Offered in Spring semester only.

64 Office Administration Laboratory (1) RPT 2

Prerequisite: Concurrent enrollment in or completion of Office Administration 39, 75, 78, 79, 82, 83, 84, 85, or 86.
Laboratory 2 hours.
This laboratory course is designed to reinforce the lectures presented in all microcomputer Office Administration classes. It gives needed practice to apply fundamental principles to the preparation of various types of documents used in business and nonbusiness classes.

70 Human Relations in the Office (3)

Prerequisite: Office Administration 31 and 34 or equivalent.
Lecture 3 hours.
Designed to help develop an understanding of one's self; how one relates to others in terms of family, social, business, or work situations; and how one motivates, manages, or supervises others. Introduces students to assertion, problem-solving, and decision-making techniques. Acquaints students with a variety of self-help agencies and outside reference materials.

Offered in the Spring semester only.

71 Universal Transcription (3) CSU

Prerequisite: The ability to type 35 words a minute and completion of Office Administration 31 and 34 or equivalent.
Lecture 2 hours; laboratory 3 hours.
Develops the ability to transcribe mailable business letters. Emphasizes the following skills: (1) typewriting, (2) producing copy from recorded dictation, (3) spelling, (4) using correct grammar and punctuation, (5) differentiating between and among word confusions, (6) arranging copy, (7) proofreading, and (8) handling supplies and equipment.

Offered in the Fall semester only.

75 Word Processing: Equipment Operation (2) CSU

Lecture 1 hour; laboratory 2 hours.
Designed to meet the needs of beginning computer students of all majors by providing the skills necessary to operate a simple word processing program, PFS: Professional Write, on an IBM PC. Emphasis is placed on understanding the logic inherent in performing basic word processing operations in order to input, edit, and print elementary documents such as letters, memos, and reports.

†UC: See page 78.

76 Keyboarding for Data Processing (1)

Laboratory 2 hours.
Develops fundamental keyboarding skills necessary to input information on the computer terminal efficiently and accurately. Designed to meet the needs of data processing students and other individuals interested in developing computer keyboarding skills.

77 Microcomputer Accounting for the Electronic Office (3)

Lecture 3 hours.
Gives students a background in bookkeeping and accounting theory as a basis for developing an understanding of microcomputer programs and applications in the electronic office. Includes acquaintance with accounting terminology, accounting procedures, cash handling procedures, record keeping, financial statements, merchandise inventory, and payroll. Introduces students to accounting software and concepts of microprocessor usage.

78 Microcomputer Accounting Applications for the Electronic Office (3) CSU

Prerequisite: Office Administration 77, Accounting 1 or 21.
Lecture 1 hour; laboratory 4 hours.
Acquaints students with the use of the microcomputer for bookkeeping and accounting applications in the electronic office. Students receive hands-on experience in keeping records, preparing financial statements, generating financial management reports, and setting up a simulated company using actual business microcomputer software packages in general accounting, payroll, accounts receivable, and accounts payable.

Offered in the Spring semester only.

79 Word Processing Applications (3)

Prerequisite: Office Administration 39 or 84, and Office Administration 2 or equivalent.
Lecture 3 hours.
Uses a word processing program to develop skill in preparing a variety of business documents. Covers formats for letters, memorandums, reports, tables, outlines, form documents, paragraph libraries, and two-column setups. Emphasizes the development of proofreading and editing skills in the preparation of business documents. Introduces desktop publishing concepts using a word processing program.

Offered in the Spring semester only.

81 Field Work (1) RPT 1

Prerequisite: Concurrent enrollment in Office Administration 24 or 58.
Laboratory 3 hours.
Provides an opportunity to obtain specialized experience in clerical, legal, or word processing environments through an internship program. During this cooperative work experience program, students are given varied practical applications in their respective fields and are able to coordinate this experience with their classroom instruction.

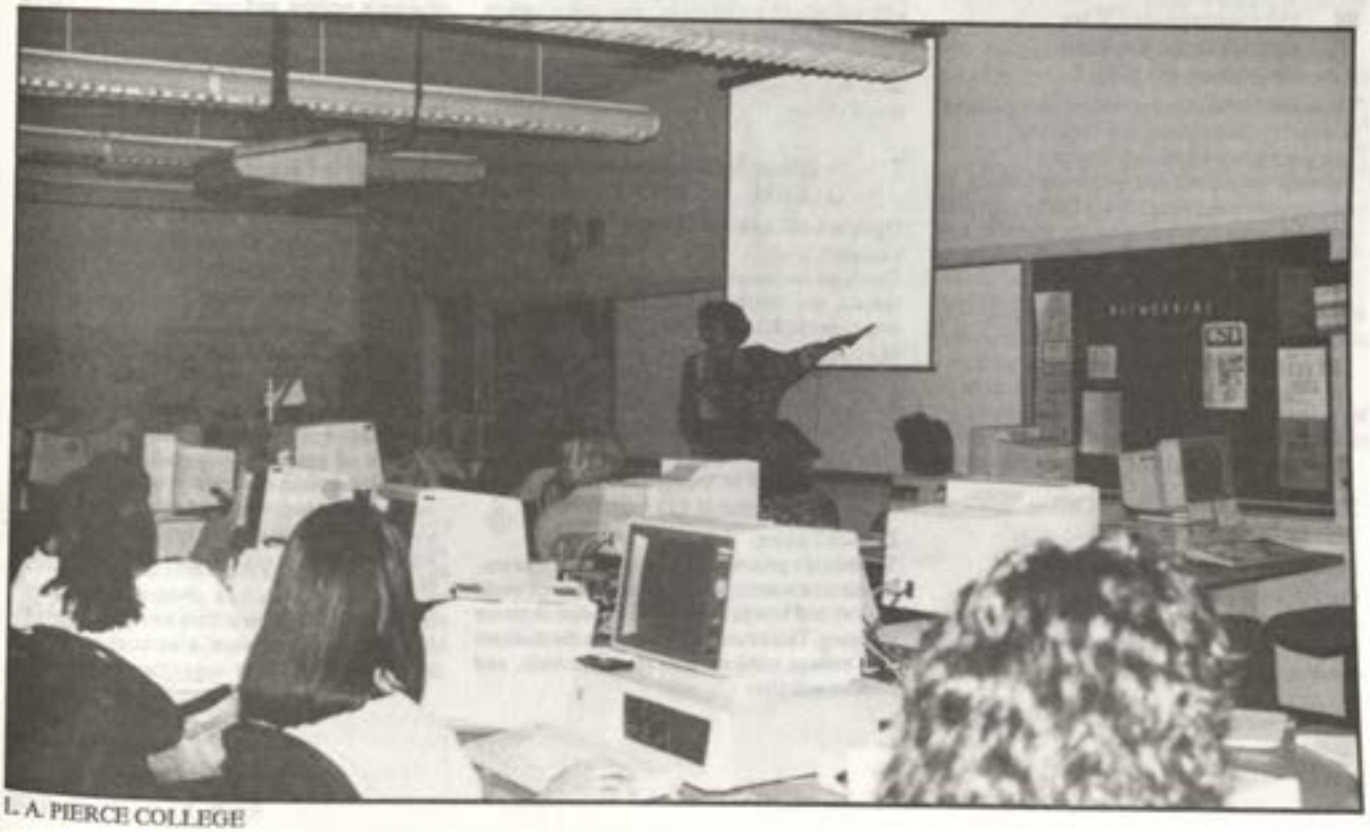
Offered in the Spring semester only.

82 Microcomputer Software Survey in the Office (3) CSU

Prerequisite: Ability to type recommended.
Lecture 1 hour; laboratory 4 hours.
Introduces students to the use of the microcomputer and commercially available software used in business offices. Course provides hands-on introduction to IBM PC/MS DOS, word processing, data base, spreadsheet, and electronic mail software. Student gains basic knowledge necessary to interact with the computer. No previous computer operating experience required.

83 Microcomputer Office Applications: Operating Systems (1)

Laboratory 2 hours.
An introduction to microcomputers and microcomputer operating systems. The course covers the major components of a microcomputer system, the operating system command structure and terminology, and printer operations. It includes hands-on use of IBM PC/MS DOS in various applications of routine microcomputer work functions.



L. A. PIERCE COLLEGE

84 Microcomputer Office Applications: Word Processing (3) CSU RPT 2

Prerequisite: Knowledge of keyboarding and good English skills.
Lecture 1 hour; laboratory 4 hours.
Provides information and hands-on training on WordPerfect utilizing the IBM PS2 microcomputer. Students will learn beginning and advanced functions and apply their skills and knowledge to a wide variety of simple and complex documents, such as letters and memorandums, columnar tables, text tables, manuscripts, and mailing list documents.

85 Microcomputer Office Applications: Spreadsheet (3) CSU

Prerequisite: Office Administration 77, Accounting 1, 21, or bookkeeping/clerical office experience.
Lecture 1 hour; laboratory 4 hours.
Designed to teach office spreadsheet applications using the IBM Personal Computer and a spreadsheet program (Lotus 1-2-3). Students learn to create, edit, format, and print worksheets. They also learn to prepare graphs from worksheets, use functions, sort and query data bases, and create macros. Emphasis is on office accounting applications and simplifying office accounting procedures.

86 Microcomputer Office Applications: Data Base (3) CSU

Lecture 1 hour; laboratory 4 hours.
Designed to teach office data base applications using an IBM Personal Computer and a data base program (dBASE III Plus). Covers records design, file creation and maintenance, data manipulation, report formats, and printing. Emphasizes office applications.

88 Microcomputer Office Applications: Desktop Publishing (3) RPT 2

Prerequisite: Office Administration 84 or equivalent and Office Administration 2 or equivalent.
Lecture 2 hours; laboratory 3 hours.
Provides instruction and hands-on training in desktop publishing using IBM or IBM-compatible personal computers, laser printers, scanners, and two software programs (WordPerfect 5.1 and PageMaker 5.0). Includes preparing advertisements, fliers, business forms, reports, newsletters, and presentations.

185 Directed Study — Office Administration (1) RPT 2

285 Directed Study — Office Administration (2)

385 Directed Study — Office Administration (3)

Prerequisite: Office Administration 1 or 2.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Office Administration on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Office Administration (1) RPT 3

921 Cooperative Education — Office Administration (2) RPT 3

931 Cooperative Education — Office Administration (3) RPT 3

941 Cooperative Education — Office Administration (4) RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

PERSONAL DEVELOPMENT

1 Introduction to College (1) (NDA) RPT 1

Lecture 1 hour.
Provides students with important information about the College and its resources. Assists the student in educational planning and acquiring skills necessary for academic success such as time management, study skills, and other skills that are necessary for college survival.

4 Career Planning (1) CSU

Lecture 1 hour.
Designed to give the vocationally undecided student an understanding of the career planning process. May include vocational tests, various self appraisal techniques, and information regarding occupational characteristics, trends, entry and career levels. Teaches career planning skills and allows the student to work toward a career choice.

7 Seminar for Returning Students (1) CSU

Open to both men and women.
Lecture 1 hour.
Develops understanding regarding concerns, interests, and needs of women in the areas of employment, education, and changing demands of home, career and society. Emphasis will be on using these understandings to enhance the academic and social growth of the students. May be offered for 10 weeks – 2 hours a week.

8 Career Planning and Development (2) CSU

Lecture 2 hours.
Teaches the process of career planning. The emphasis is on learning about yourself and the world of work and how to use this information in career planning. This course also acquaints the students with college services, personnel, curricula, and student activities.

15 Personal Development Seminar (3) (NDA) RPT 3

Lecture 3 hours.
Group study of a selected topic, the title and units to be specified in the schedule of classes. No more than 3 units may be taken in any semester.

PHILOSOPHY

2 Introduction to Philosophy II (3) UC:CSU (CAN PHIL 2)

Lecture 3 hours.
Introduces the student to some of the traditional subjects and contemporary issues in Philosophy; includes some of the approaches and terminology found in philosophical literature.

3 History of Greek Thought (3) UC:CSU (CAN PHIL 8)

Lecture 3 hours.
Introduces the student to most of the important philosophers of ancient Greece and Rome. Covers the development of Western Philosophy from the pre-Socratics through Plotinus, with special emphasis on Plato and Aristotle.

4 History of Modern Thought (3) UC:CSU (CAN PHIL 10)

Prerequisite: Philosophy 3.
Lecture 3 hours.
Traces Western Philosophy from the rise of modern science to the 20th century, with special emphasis on Descartes, Locke, Hume and Kant.

6 Logic in Practice (3) UC:CSU (CAN PHIL 6)

Lecture 3 hours.
Applies the logical principles of sound thinking to morals, politics, and everyday life. Emphasis is placed upon the analysis of language as an aid to sound thinking.

7 Inductive Logic (3) UC:CSU

Lecture 3 hours.
Introduces the concepts, methods, and limitations involved in the systematic procedures of factual inquiry in the sciences and in ordinary thought. Includes probability, measurement, causal relations, statistical inference, the concepts of "law" and "theory."

9 Symbolic Logic I (3) UC:CSU

Lecture 3 hours.
Introduces the student to formal logic, describing various systems of symbolization, the logical concept of sentential connectives and quantifiers. Introduces the concept of deductive logic using various techniques of proof. Uses techniques of translation and the application of formal logic to analysis of arguments and determination of validity.

12 History of Contemporary Philosophy

Lecture 3 hours.
Studies recent philosophical developments in Continental and Anglo-American philosophy with readings from such figures as Nietzsche, Heidegger, Husserl, Derrida, Foucault, Gadamer, Ricoeur, Habermas, Russell, Wittgenstein, Dewey, Quine, Rawls, Davidson and Rorty.

19 Contemporary Problems in Bioethics (3) UC:CSU

Lecture 3 hours.
Introduces the student to some of the traditional ethical theories and how they apply to contemporary biomedical ethical problems. Among specific issues to be discussed are abortion, surrogacy, euthanasia, informed consent, genetic engineering, suicide, organ donation, and allocation of scarce resources. 45 C. E. U.'s will be available upon request.

20 Ethics (3) UC:CSU (CAN PHIL 4)

Lecture 3 hours.
Considers human conduct, its rules and natural law, the moral basis of institutions, religions, and the moral order.

22 Philosophies of the Orient (3) UC:CSU

Lecture 3 hours.
Presents the basic concepts of the philosophical systems originating in the civilizations of China, Japan, and India. Considers differences between Oriental and Occidental attitudes and concepts in relation to the impact of Western thought on current philosophy in the Orient.

24 An Introduction to the Philosophy of Literature (3) UC:CSU

Lecture 3 hours.
Studies the literary medium as it is employed to express and explore philosophical themes such as freedom, determinism, moral responsibility, alienation and logic. Each particular class also allows for a review of literature of a relatively specific milieu, for example, twentieth century existentialism. Cognate concepts from literary criticism, anthropology, sociology, psychology and religion are utilized for understanding selected literary works although no background in any of these fields is required.

25 Survey of Western Religious Thought (3) UC:CSU

Lecture 3 hours.
Offers a scholarly study of religion that explores basic structures of religious belief and practice. Examines the world-views which influenced and shaped the growth and development of the western religious tradition; encourages a desire to understand as a means of overcoming the destructive exchanges that frequently accompany religious discussion.

86 Philosophy and Cinema (3) CSU

Examines traditional philosophical problems about the meaning of life, truth, knowledge and belief, reality, self and society, reason and emotion, morality and justice, freewill and determinism, and the meaning and role of philosophical questioning itself through selected films.

201 Logic in Written Communication (3) UC:CSU

Prerequisite: English 101 with a grade of "C" or better must be completed.

Lecture 3 hours.
Critically examines language and argumentation in written material from journalism, literature, and philosophy. Includes the writing of precis, short essays, and a research paper.

PHOTOGRAPHY

9 Introduction to Cameras and Composition (3) CSU

NOTE: Intended for non-photo majors. No laboratory. Students must have a 35 mm camera. Fully automatic cameras without manual override capabilities do not allow students to fulfill some of the course's required assignments and limit the student's ability to learn basic photography concepts. If in doubt, contact the Photography Lab in BUNG 0333 for specific recommendations.
Lecture 3 hours.
Designed to provide basic information in the use of cameras, lenses, film and exposure to produce good photographs. Slide assignments are given for analysis in class.

10 Beginning Photography (3) *UC:CSU (CAN ART 18)

NOTE: Students must have a 35 mm camera. Fully automatic cameras without manual override capabilities do not allow students to fulfill some of the course's required assignments and limit the student's ability to learn basic photography concepts. If in doubt, contact the Photography Lab in BUNG 0333 for specific recommendations.
Recommended: Previous or concurrent enrollment in Journalism 100 for Photojournalism majors. Students interested in taking advanced photo classes should enroll in Photography 27 concurrently with Photography 10 or the next semester.
Lecture 2 hours; laboratory 3 hours.
Presents theory and practice in basic photography with emphasis on the use of a 35 mm camera, development of negatives and final prints. Students should have their own cameras.

11 Advanced Photography (4) CSU RPT 2

Prerequisite: Photography 10 with a grade of "C" or better.
Recommended: Previous or concurrent enrollment in Journalism 101 for Photojournalism majors.
Lecture 2 hours; laboratory 6 hours.
Provides theory and practice of contemporary use of the camera; training in projection control; includes special effects procedures with an emphasis on creative thinking and idea preparation and execution.

12 Advanced Photographic Techniques (4) CSU

Prerequisite: Photography 11 with a grade of "B" or better and completion of or concurrent enrollment in Photography 20 and 27.
Lecture 2 hours; laboratory 6 hours.
Offers a study of advanced photographic techniques, theory, chemicals and formulas necessary to the creative photographer. Includes special effects, such as bas-relief, reticulation, solarization, texture screens, montage printing, etc.

16 Fundamental Commercial Photography (3)

Prerequisite: Photography 11 with a grade of "B" or better and completion of or concurrent enrollment in Photography 20 and 27.
Lecture 2 hours; laboratory 3 hours.
Covers the major phases of commercial and illustrative photography as they apply to publication photography.

17 Introduction to Color Photography (3) CSU

Prerequisite: Photography 11 with a grade of "B" or better and completion of or concurrent enrollment in Photography 20 and 27.
Lecture 2 hours; laboratory 3 hours.
Studies the theory of light and color and its relationship to exposure and color printing (type C and type R). Also, color negative (C-41) and transparency processing (E-6), color printing techniques and basic quality control are studied and practiced.

20 Beginning Photojournalism (4) CSU

Prerequisite: Photography 10 with a grade "C" or better.
Recommended: Previous or concurrent enrollment in Journalism 101 for Photojournalism majors.
Lecture 2 hours; laboratory 6 hours.
Covers photojournalism methods, coverage of news, feature, sports events, and documentary photography.

21 News Photography (4) CSU RPT 3

(Same as Journalism 221. Credit not given for both courses.)

Prerequisites: Photography 11 and 20 with a grade of "B" or better and completion of or concurrent enrollment in Photography 27.

Lecture 2 hours; laboratory 6 hours.

Gives practice experience in the taking and processing of news and feature pictures, emphasizing the use of cameras normally employed in photo-journalism. Affords students the opportunity to take, develop, and print pictures for the college newspaper and magazine.

27 History and Aesthetics of Photography (6) UC:CSU

Recommended: Completion of or concurrent enrollment in this class is required to enroll in advanced photo classes. Photo-journalism majors must take this course no later than third semester of sequence.

Lecture 6 hours.

Provides a chronological description of the major developments of the photographic medium. Relates these developments to society and to events in the other visual arts, and examines the meaning of photography as a work of art.

UC Credit Limit: Maximum three units.

185 Directed Study — Photography (1) CSU RPT 2

285 Directed Study — Photography (2) CSU

385 Directed Study — Photography (3) CSU

Conference 1 hour per unit.

Allows students to pursue Directed Study in Photography on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Photography (1) CSU RPT 3

921 Cooperative Education — Photography (2) CSU RPT 3

931 Cooperative Education — Photography (3) CSU RPT 3

941 Cooperative Education — Photography (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: See Art courses with **.*

PHYSICAL EDUCATION

University of California accepts 4 units of credit from the following Physical Education courses listed under the headings of Water Activities, Individual and Dual Activities, Team Sports, Dance Activities, and Intercollegiate Sports plus related activities. All classes may be taken by either gender with the exception of Intercollegiate Sports, which classifies various activities for "Men" or "Women."

Note: Only courses marked activity meet the District Requirement for Physical Education activity. Read thoroughly the Schedule of Classes to denote which level one should enroll in (i. e., Beg., Int., Adv.).

The activity of Physical Education requires repetitive practice for the student to achieve the course objectives. For this reason, it is educationally sound for a student to repeat a Physical Education activity course. No activity course may be taken for more than four semesters.

Check with the Department or Counseling Office for transferability of courses to four-year institutions and for unit limitations of courses accepted by both University of California and CSUN.

90 Individual Physical Fitness Laboratory A and B (2) CSU RPT 3

Laboratory 4 hours.

Individualized program to develop cardiovascular endurance, muscular endurance, strength and flexibility through aerobics,low impact aerobics, power walking, jogging, weight training, resistance exercises, aqua-aerobics, par course and other exercise equipment. Individual evaluation and information on fitness, body composition analysis, nutrition and stress management.

91 Theory and Application of Aerobics and Conditioning (3) CSU

Lecture 2 hours; laboratory 2 hours.

Increases student awareness regarding changes in physiology resulting from aerobic exercise. Provides the students with an opportunity to participate in, and understand the components of a valid conditioning and nutritional program.

96 Combined Activities (1) *UC:CSU RPT 3

Activity, 2 hours.

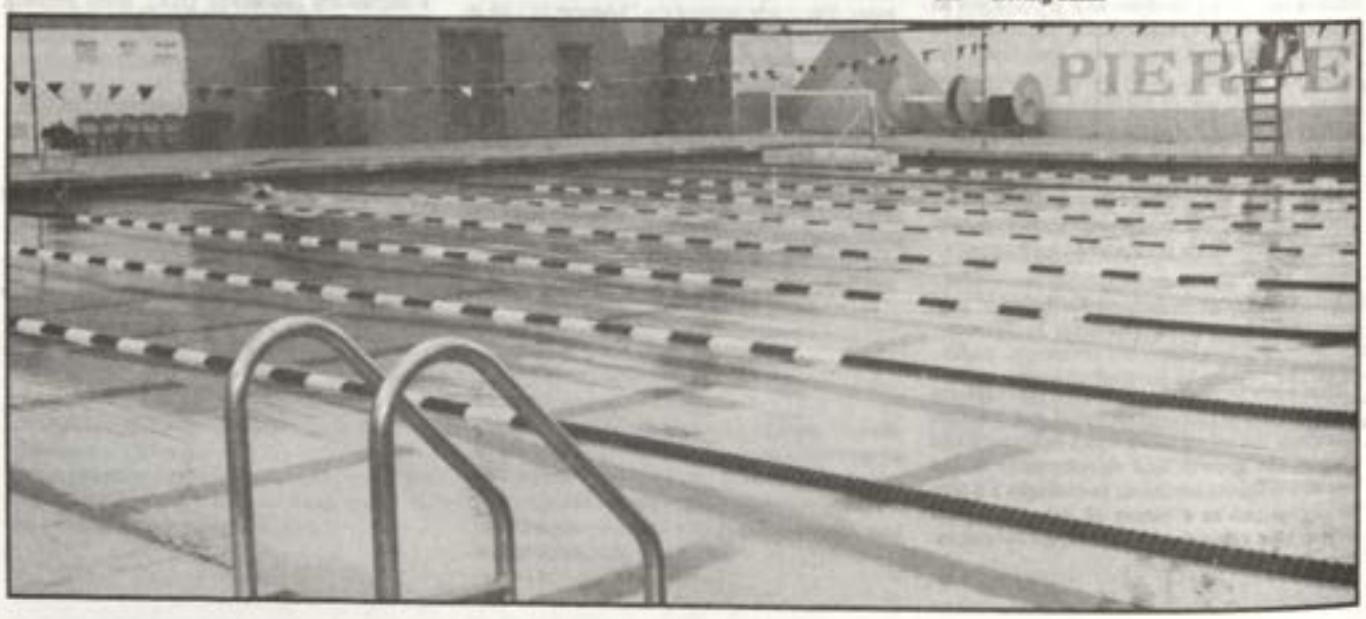
Principles, techniques, and practices of fundamental movements used in sports activities, rhythmic activities as swing and line dances, aquatics, and gymnastics, and other conditioning activities as directed are included in this course, or offers opportunity to develop individual skills and rule knowledge in traditional games (may include croquet, paddle tennis, table tennis, deck tennis, archery, running, body conditioning and others as facilities permit.)

Water Activities (1) *UC:CSU RPT 3

Activity, 2 hours.

Beginning, intermediate, and advanced levels offered for all courses listed below except 101. All levels may not be taught each semester:

101 Swimming — Non-Swimmer
102 Swimming Skills
105 Diving Skills



Individual and Dual Activities (1) *UC:CSU RPT 3

Activity, 2 hours.
Beginning, intermediate, and advanced levels offered for all courses listed below. All levels may not be taught each semester:

203 Badminton Skills
206 Handball Skills
212 Tennis Skills
222 Racquetball Skills
225 Yoga Skills
228 Body Conditioning
229 Body Dynamics
230 Weight Training Skills
238 Self-Defense Skills
247 Gymnastics Skills
253 Wrestling Skills
256 Fencing Skills
259 Golf Skills
277 Snow Skiing Skills (no credit for UC)
289 Bowling Skills

Team Sports (1) *UC:CSU RPT 3

Activity, 2 hours.
Beginning, intermediate, and advanced levels offered for all courses listed below. All levels may not be taught each semester:

301 Baseball Skills
304 Basketball Skills
310 Flag/Touch Football Skills
313 Soccer Skills
322 Volleyball Skills
328 Softball Skills

Dance Activities (1) UC:CSU RPT 3

Activity, 2 hours.
Level 1-2-3-4 offered for all courses listed below, but all levels may not be taught each semester:

**401 International Folk Dance
**431 Modern Dance
**434 Ballet
**437 Jazz
*440 Social Dance
*446 Tap Dance

Intercollegiate Sports--Men, Women, and Coed. (2)UC:CSU RPT 1, except as noted

Activity, 10 hours or more in the sports in season.

*503 Baseball
*504 Basketball
*508 Football
*512 Softball
*513 Swimming
*514 Tennis
*516 Volleyball
*517 Water Polo
550 Cheer/Yell Leader/Marching Band (no credit for UC) RPT 3

666 Body Conditioning (1) *UC:CSU RPT 3

Laboratory 3 hours.
This course offers instruction and participation in theory and techniques of attaining increased overall fitness through endurance and strength training utilizing resistance machines, circuit training, par course, and running.

690 Weight Training (1) *UC:CSU RPT 3

Laboratory 3 hours.
This course offers instruction and practice in theory and techniques of weight training to gain muscle strength, flexibility, and endurance.

701 Advanced Lifesaving (2) UC:CSU

Prerequisite: Students must be able to: 1. perform a standing front dive in reasonably good form, 2. swim 500 yds continuously demonstrating some ability in using a front crawl stroke, a side stroke utilizing a scissor kick, and a stroke done for the back using an inverted scissors or inverted breast-stroke kick, 3. surface dive to minimum depth of 8. 029 feet and swim 20. 029 feet underwater and, 4. tread water one minute.
Lecture 1 hour; activity 2 hours.
Encompasses the knowledge and skills essential for personal safety in and on the water and includes training to assist or rescue a person in danger of drowning. Students satisfactorily completing this course will receive their Advanced Lifesaving Cards from the American National Red Cross. Written and practical examinations are given.

702 Water Safety Instruction (3) UC:CSU

Prerequisite: A valid Advanced Lifesaving Certificate. This class meets the credit for Physical Education activity. A qualifying swimming test is required.
Lecture 2 hours; plus 2 hours related swimming.
This class grants the Red Cross Water Safety Instructor Certificate to students who successfully complete the requirements.

802 Modern Dance II (3) **UC:CSU

Prerequisite: Physical Education 431 and 801.
Lecture 2 hours; laboratory 4 hours.
Basically the same as Physical Education 801. Differs in the student's ability to execute the class work on a higher performance level. Historically explores dance as an expressive art.

803 Modern Dance III (3) **UC:CSU

Prerequisite: Physical Education 802.
Lecture 2 hours; laboratory 4 hours.
Intermediate techniques and principles. Historically explores dance of the Renaissance through 1850.

804 Modern Dance IV (3) **UC:CSU

Prerequisite: Physical Education 803.
Lecture 2 hours; laboratory 4 hours.
Intermediate and advanced techniques. Historically explores dance of 1850 to present.

812 Current Dance Events (1) CSU

Prerequisite: Concurrent enrollment in Humanities 89 recommended.
Lecture 1 hour; laboratory 2 hours.
Enriches the student's dance, movement and related art experiences through opportunities to observe and participate in a wide variety of dance experiences. Consists of demonstrations by faculty, students, and guest artists. Offers previews of current concerts, symposia, and workshops with opportunities to attend and critically analyze these events. Emphasis will include an increased awareness and a greater understanding of the self and individual's response to his environment.

814 Dance Production (2) **UC:CSU RPT 3

Lecture 1 hour; activity 2 hours.
Provides laboratory experience in developing the skills involved in dance production; choreography, set design, lighting, directing, and costume design.

818 Fundamental Rhythms (2) CSU RPT 3

Lecture 1 hour; laboratory 2 hours.
Designed primarily for Physical Education, Recreation, and Elementary Education majors. Rhythm analysis and performance of the fundamental movements, folk, square, social, and modern dance.

819 Choreography (3) UC:CSU RPT 3

Prerequisite: Modern Dance, Ballet, or Jazz experience.
Lecture-lab 6 hours.
Offers experience and enrichment in the creative tools of choreography.

185 Directed Study -- Physical Education (1) †UC:CSU RPT 2

285 Directed Study -- Physical Education (2) †UC:CSU

385 Directed Study -- Physical Education (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Physical Education under the direction of a supervising instructor.

911 Cooperative Education -- Physical Education (1) CSU RPT 3

921 Cooperative Education -- Physical Education (2) CSU RPT 3

931 Cooperative Education -- Physical Education (3) CSU RPT 3

941 Cooperative Education -- Physical Education (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Any or all courses, maximum 4 units.*

***UC Credit Limit: Any or all courses, maximum 12 units.*

†UC: See page 78.

PHYSICAL SCIENCE

1 Physical Science I (3) *UC:CSU

Credit not given for both Physical Science 1 and Physics 12.
Lecture 3 hours.
Surveys the field of physics stressing the historic development and the application in today's culture. Students who are interested in teaching are encouraged to enroll. A one unit laboratory,Physical Science 14, is available but is not obligatory.

4 Physical Science & Laboratory (4) *UC:CSU

(Same as Physical Science 1 and 14 combined.)
Lecture 3 hours; laboratory 2 hours
Surveys physical science by examining its physics foundation. Provides the historic development and stresses applications of physics to everyday life. Topics may include mechanics, heat, fluids, waves, electricity and magnetism, optics and modern physics. The laboratory component supplements the instruction.

5 Introduction to Air Pollution (3) UC:CSU

(Same as Environmental Science 9. Credit not given for both courses.)
Lecture 3 hours.
Introduces the student to the sources of air pollution and the technical problems of reducing air pollution. The course includes the physics of the atmosphere, the chemistry of air pollutants, analysis methods and possible methods of pollution control.

14 Physical Science Laboratory (1) *UC:CSU

Corequisite: Physical Science 1 or Physics 12 (concurrent enrollment).
Laboratory 2 hours.
Provides laboratory experience supplementing the instruction given in Physical Science 1 or Physics 12.

185 Directed Study — Physical Science (1) †UC:CSU RPT 2

285 Directed Study — Physical Science (2) †UC:CSU

385 Directed Study — Physical Science (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Physical Science on a contract basis under the direction of a supervising instructor.

**UC Credit Limit: Physical Science 1, 4, and 14 combined, maximum credit 4 units.*

No Credit for Physical Science 1 if taken after the college course in astronomy, chemistry, geology, or physics

PHYSICS

All Physics, Engineering, and Astronomy majors, should enroll in either Physics 37 if qualified or Physics 6 their first semester at Pierce.

6 General Physics I (4) *UC:CSU (CAN PHYS 2)

Prerequisite: A course in trigonometry.
Lecture 3 hours; laboratory 3 hours.
Considers the fundamental principles and applications of mechanics, heat, fluids, wave motion and sound.

7 General Physics II (4) *UC:CSU (CAN PHYS 4)

Prerequisite: Physics 6 with a grade of "C" or better.
Lecture 3 hours; laboratory 3 hours.
Continues Physics 6 into principles of electricity, optics, and modern physics.

11 Introductory Physics (4) **UC:CSU

Prerequisite: A course in trigonometry or equivalent. (Calculator with trig functions required.)
Lecture 3 hours; laboratory 3 hours.
Introduces concepts of classical and modern physics with problem solving. The quantitative introduction stresses units and interaction of ideas. The laboratory supplements and illustrates the ideas.

12 Physics Fundamentals (3) **UC:CSU

Credit not given for BOTH Physical Science 1 and Physics 12.
Lecture 3 hours.
Surveys the field of physics stressing the historic development and the application in today's culture. Students who are interested in teaching are encouraged to enroll. A one unit laboratory, Physical Science 14, is available but is not obligatory.

37 Physics for Engineers and Scientists I (5) *UC:CSU (CAN PHYS SEQ B)

Prerequisite: Mathematics 261 and one of the following: High school Physics, Physics 11, Physics 6 and 7.
Lecture 4 hours; laboratory 3 hours.
Introduction to the dynamics and statics of particles and rigid bodies, harmonic vibrations, and fluid mechanics.

38 Physics for Engineers and Scientists II (5) *UC:CSU (CAN PHYS SEQ B)

Prerequisite: Physics 37 and Mathematics 262 with grades of "C" or better.
Corequisite: Mathematics 263.
Lecture 4 hours; laboratory 3 hours.
Introduction to heat, thermodynamics, kinetic theory, electricity and magnetism, electric circuits, Maxwell's equations.

39 Physics for Engineers and Scientists III (5) *UC:CSU (CAN PHYS SEQ B)

Prerequisite: Physics 38, Mathematics 263 with grades of "C" or better.
Lecture 4 hours; laboratory 3 hours.
Introduction to wave motion, sound, electromagnetic waves, geometrical and physical optics, relativity, atomic and nuclear physics.

911 Cooperative Education — Physics (1) CSU RPT 3

921 Cooperative Education — Physics (2) CSU RPT 3

931 Cooperative Education — Physics (3) CSU RPT 3

941 Cooperative Education — Physics (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Physics 6 combined with Physics 37, deduct 2 units from Physics 6. Physics 6 combined with Physics 38 or 39, deduct 1 unit each from Physics 6. Physics 7 combined with Physics 38 or 39, deduct 2 units each from Physics 7.*

***UC Credit Limit: Physics 11 and 12 combined, maximum one course. No credit if taken after Physics 6 or 37.*

PHYSIOLOGY

1 Introduction to Human Physiology (4) *UC:CSU (CAN BIOL 12)

Prerequisite: Biology 3 and Anatomy 1 with a grade of "C" or better and High School chemistry or equivalent.
Lecture 3 hours; laboratory 3 hours.
Studies the principle functions of the human body; circulatory, respiratory, digestive, nutritional, nervous, sensory, muscular, excretory, endocrine, and reproductive.

8 Integrated Human Anatomy and Physiology I (4) *UC:CSU

Prerequisite: Biology 3 and high school chemistry or equivalent.
Lecture 3 hours; laboratory 3 hours.
Provides an introduction to the structure and function of the human body, with emphasis on the organ and systems levels. The basic sciences of anatomy and physiology are integrated and presented with selected practical applications.

†UC: See page 78.

9 Integrated Human Anatomy and Physiology II (4) *UC:CSU

Prerequisite: Physiology 8.
Lecture 3 hours; laboratory 3 hours.
The basic concepts of anatomy and physiology learned in Physiology 8 are applied to the study of the cardiovascular, immune, respiratory, urinary, digestive, and reproductive systems. The structure and function of these systems are integrated with practical applications.

18 Environmental, Metabolic and Nutritional Physiology (3) CSU

NOTE: Physiology 18 is approved for continuing education credit in nursing. The Provider Number is 00132.
Prerequisites: Physiology 1 or 9.
Lecture 3 hours.
An advanced physiology course designed for students in a nursing program. The course covers systemic metabolism, specific environmental challenges to homeostasis, nutrient physiology and the relationship between nutrients and homeostatic disorders. Each student is expected to have current knowledge of cellular function, college chemistry and human physiology.

**UC Credit Limit: Physiology 1, 8, and 9 combined, maximum 8 units.*

POLITICAL SCIENCE

(Also See Law 3)

1 The Government of the United States (3) UC:CSU (CAN GOVT 2)

Lecture 3 hours.
Studies the government of the United States as to historical background, constitutional background and development, structures and organizations, legal framework, basic concepts and key problems. Also provides an understanding of U. S. foreign policy, political parties and the electorate, civil liberties and civil rights, and issues facing the American people. A special study of California state and local government is a basic part of this course, providing for a strong civic involvement in self-government.

2 Modern World Governments (3) UC:CSU

Prerequisite: It is **recommended** *that students complete Political Science 1 or 30 with a passing grade before enrolling in Political Science 2.*
Lecture 3 hours.
Studies a selected variety of major national states to secure a comparative picture of political philosophies, constitutions, political processes and governmental institutions. Emphasis is placed on those factors, geographic, historic, demographic and cultural, which contribute to differences in governmental experiences.

7 Contemporary World Affairs (3) UC:CSU RPT 1

Prerequisite: It is **recommended** *that students complete Political Science 1 or 30 with a passing grade before enrolling in Political Science 7.*
Lecture 3 hours.
Studies modern international relations and the forces which confront policy makers. Emphasizes current areas of crisis. Provides a basic understanding of the position of the United States in a tense and highly competitive political world.

14 Government and Politics in the Middle East (3) UC:CSU

Prerequisite: It is **recommended** *that students complete Political Science 1 or 30 with a passing grade before enrolling in Political Science 14.*
Lecture 3 hours.
Introduces political and governmental patterns prevalent in the Middle East including the Maghrabi States, Turkey, Iran, and Israel. Special consideration given to the importance of Islam, the politics of oil, intra-area conflicts, American policy, relations between Middle Eastern states and the rest of the world.

30 The Political Process (3) UC:CSU

Lecture 3 hours.
Surveys the nature, operation, and foundations of the democratic order with specific focus on elections, campaigning, political behavior, public opinion, political parties, and interest groups at the national and state levels in the United States.

35 Special Studies in Political Science (3) UC:CSU

Prerequisite: It is **recommended** *that students complete Political Science 1 or 30 with a passing grade before enrolling in Political Science 35.*
Lecture 3 hours.
Provides for the study of American foreign and defense policies. It examines the challenges the United States has faced in the world since 1945 and the policies it has adopted to provide for its national security and secure its foreign policy goals. The course will review the manner in which the United States determines its foreign and defense policies and the instruments it employs to achieve its goals.

185 Directed Study – Political Science (1) †UC:CSU RPT 2

285 Directed Study – Political Science (2) †UC:CSU

385 Directed Study – Political Science (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Political Science on a contract basis under the direction of a supervising instructor.

911 Cooperative Education – Political Science (1) CSU RPT 3

921 Cooperative Education – Political Science (2) CSU RPT 3

931 Cooperative Education – Political Science (3) CSU RPT 3

941 Cooperative Education – Political Science (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.
Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.
Limits to transfer credit: See Cooperative Education Credit Guide.

PSYCHOLOGY

1 General Psychology I (3) *UC:CSU (CAN PSY 2)

Required for Psychology majors.
Lecture 3 hours.
Presents an introduction to the vocabulary, methods, and problems of psychology. Discusses individual and social problems of everyday life through the viewpoints and methods of modern scientific psychology.

2 General Psychology II (3) UC:CSU (CAN PSY 10)

Note: Physiological Psychology.
Prerequisite: Psychology 1 or 6.
Lecture 3 hours.
Provides an introduction to physiological psychology which considers the functional and anatomical aspects of the nervous system as they apply to behavior. Physiologic processes, structure and function of sense organs, and the effects of natural and introduced blood transported substances are analyzed in terms of their influences on emotions, speech, intelligence, consciousness, sleep, motivational and psychosomatic relationships.

3 Personality and Social Development (3) CSU

Lecture 3 hours.
Seeks to develop an understanding of personality dynamics and structure, theories of personality development, various behavior forms, and the psychological basis of emotional adjustment. Examines the concepts of mental health, and stresses the application of insights gained to life problems.

4 Applied Psychology (3) CSU

Prerequisite: Psychology 1 or 6.
Lecture 3 hours.
A study of the way in which psychology can be applied in increasing personal and occupational efficiency, and problems relating to the applications of psychology in industry, personnel work, business, law, criminology, medicine and nursing.

†UC: See page 78.

6 Human Behavior (3) *UC:CSU

Note: Not recommended for students who have credit for Psychology 1, who are Psychology majors, or whose major requires Psychology 1.

Lecture 3 hours.

Introduces the student to the methods and data of psychology as a behavioral science. Enables students to apply systematically obtained data and technique to their own experience and to their relations with others.

9 Introduction to College (1) (NDA) RPT 1

Note: All Psychology 9 classes are offered on a credit/no credit basis only. Students do not have the option of receiving a letter grade.

Lecture 1 hour.

Introduces the new student to college through familiarization with higher education in America with particular emphasis on the unique nature of the community college and the student's place in it. Acquaints the student with the structure and functions of the college, its history, philosophy, programs, instruction, and administration, as well as its services and facilities, such as counseling, student activities, and library, all toward effecting good college adjustment and appropriate educational choice and planning.

10 Principles of Psychology (3) UC:CSU

Prerequisite: Psychology 1 and Statistics 1 or concurrent enrollment.

Lecture 2 hours; laboratory 3 hours.

Designed especially for psychology majors and other students planning further work in psychology. Emphasis is placed on psychology as a fundamental science and the place of the scientific method in the study of behavior is stressed. Basic experiments will be designed and executed by each student.

11 Child Psychology (3) UC:CSU

Prerequisite: Psychology 1 or 6.

Lecture 3 hours.

Considers general specific behavior patterns of children, with a view to helping adults better understand the child's behavior and development.

13 Social Psychology (3) UC:CSU

Prerequisite: Psychology 1 or 6.

Lecture 3 hours.

Studies individual behavior as it affects others and as it is affected by others. Considers leading principles discovered by social scientists. Includes cultural anthropology, growth and decline of social institutions, types of individual interaction, and human ecology.

14 Abnormal Psychology (3) UC:CSU

Prerequisite: Psychology 1 or 6.

Lecture 3 hours.

Acquaints the student with dynamics of personality, adjustment mechanisms, mental mechanisms, types of emotional disorders, various theories of their origin and development, and various therapeutic approaches.

16 Love and Marriage (3) CSU

Lecture 3 hours.

Presents a scientific study of human behavior and experience as expressed in love and marriage. Such topics as the psychological motives of couples, the emotional maturity of couples, the need for an adequate frame of reference for marriage, the development of interpersonal competence and effective partner and parentage relations are studied.

17 The Exceptional Child (3) CSU

Prerequisite: Psychology 1 or 6.

Lecture 3 hours.

Considers personality, social, and cognitive development of exceptional children. That is, mentally retarded, emotionally disturbed, brain damaged, educationally handicapped, sensory impaired, bilingual, creative, and gifted children. Discusses familial reaction, special educational problems and techniques, and self image.

18 Psychology of Women's and Men's Changing Roles (3) UC:CSU

Prerequisite: Psychology 1.

Lecture 3 hours.

Studies psychological and sociological implications of sex roles. Covers present information and research on biologically and culturally determined characteristics of women and men, how these affect personality, their relationship to work, education, family, law and politics. Special adjustment problems of men and women in our society will be emphasized.

24 Scholastic and Personal Development (3) (NDA)

Note: Academic and personal skills for success in college.

Lecture 3 hours.

Designed to help students formulate and achieve academic and personal goals. Focuses on such academic skills as: note-taking, test-taking, test-anxiety reduction, self-discipline, time- management and learning techniques. In addition, various psychological strategies are used to help students achieve personal success. Topics include habit control, motivation training, personal exploration and enhancement of self-esteem. This course is especially useful for adults who are returning to college.

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26 Power and Speed Reading (3) CSU RPT 1

Note: Not recommended for students currently enrolled in Developmental Communications 20X.
Lecture 3 hours.
Emphasizes the development of reading speed, comprehension, and vocabulary through practice with various audio-visual devices. Emphasis is placed on applying techniques to both study and leisure reading.

36 Psychology of Chemical Dependency (3) CSU

Prerequisite: Psychology 1 or 6.
Lecture 3 hours.
Introduces causes of alcohol and drug usage and addiction and their effect on human behavior. Examines the effects of various types of drugs on the brain and nervous system. Also examines the contribution of heredity and environment. Discusses treatment programs, education and prevention.

37 Psychology of Codependency and Family Systems (3) CSU

Prerequisite: Psychology 1 or 6.
Lecture 3 hours.
Studies the effects of chemical dependency on family systems and individuals within the family. Addiction is a family disease. When one member of the family unit is chemically dependent, the entire system becomes dysfunctional. An exploration will be made of codependency, the adult child syndrome, breaking the cycle of addiction, child abuse, sexual abuse, eating disorders, and family violence.

40 Psychology of Parent Child Relations (3) CSU

Prerequisite: Experience with children desired.
Lecture 3 hours.
Presents a program for parents and others responsible for managing or raising children.

42 Organizational Psychology (3) CSU

Lecture 3 hours.
Assists supervisory personnel in understanding the people and the organization they deal with; emphasis on the psychological aspects, perceptions, learning processes, emotions, attitudes, personalities, and group dynamics.

43 Principles of Group Dynamics I (3) CSU

Prerequisite: Psychology 1 or 6.
Lecture 3 hours.
Introduces the student to the dynamics of group interactions with an emphasis upon the individual's first-hand experience as the group studies itself. Under supervision, the factors involved in problems of communication, effective interpersonal skills and individual growth, will be highlighted. In addition, factors involved in group problem-solving, leadership, change and productivity will be examined.

51 Psychology of Consciousness (3) CSU

Psychology 1 or 6.
Lecture 3 hours.
Study of modern research into the psychology of consciousness and altered states of consciousness, such as sleep, drugs, meditation, biofeedback, extrasensory perception, hypnosis, and creativity. The study of psysiological concomittants is included.

52 Psychological Aspects of Human Sexuality (3) UC:CSU

Prerequisite: Psychology 1.
Lecture 3 hours.
Explores the psychological aspects of human sexuality. Addresses areas of sexual development and functioning as they have meaning for the individual as he/she develops his/her core awareness of self and sexual identity. Topics include male and female anatomy and function of sex organs; genesis of sexuality; myths and fallacies regarding the sexual process; its significance as a life function; dysfunction and variant behavior.

60 Stress Management (3) CSU

Lecture 3 hours.
Examines methods of managing environmental, organizational, social and internal stress in an effort to promote more effective coping on the part of the individual in occupational, interpersonal and everyday life situations.

81 Field Work I (3) †UC:CSU RPT 1

Note: Open only to students who are currently enrolled in or have completed a Child Psychology course.
Lecture 1 hour; laboratory 5 hours.
Provides a lecture-activity course that may be elected by the student wishing field experience in a specific topic area. Field work is allowed only by the permission of the instructor in those courses where it is appropriate.

185 Directed Study — Psychology (1) †UC:CSU RPT 2

285 Directed Study — Psychology (2) †UC:CSU

385 Directed Study — Psychology (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Psychology on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Psychology (1) CSU RPT 3

921 Cooperative Education — Psychology (2) CSU RPT 3

931 Cooperative Education — Psychology (3) CSU RPT 3

941 Cooperative Education — Psychology (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Psychology 1 and 6 combined, maximum one course.*

PUBLIC RELATIONS

1 Principles of Public Relations (3) CSU

Lecture 3 hours.
Evaluates Public Relations as a growing profession. Looks at the job opportunities for the practitioner, internal and external PR and the staff as well as the counselor tasks. Investigates relationships with the media, organizing and executing campaigns. The use of photography, graphics and marketing is studied.

QUALITY CONTROL

(See listing under Industrial Technology - Quality Control)

READING

(See Psychology and Developmental Communications)

REAL ESTATE

California Real Estate Brokerage License Examination current requirements are: 1)Real Estate 3, 5, 7 and 9; 2)three units from Real Estate 21 or Accounting 1; 3)three units from Real Estate 1, 6, 8, 10, 14, 16, 18, 19, 35, Escrow 1 or Business 5.

1 Real Estate Principles (3) CSU

Lecture 3 hours.
Surveys the fundamentals and principles of real estate, including such major topics as real estate practices, law, finance, appraisal, building and construction, investment and property management. Vocational opportunities in real estate are also discussed. This course is basic in terminology and principles to all other real estate courses.

†UC: See page 78.

3 Real Estate Practices (3) CSU

Prerequisite: Real Estate 1.
Lecture 3 hours.
Covers the problems of establishing and operating a real estate brokerage business. Topics include establishing the office, securing listings and prospects, showing properties, closing sales, financing, property management, rentals and leases, appraising, and a survey of the California Real Estate Act. This course applies toward the mandatory requirement for the broker's license.

5 Legal Aspects of Real Estate I (3) CSU

Prerequisite: Real Estate 1 and 3; Business 5 is recommended.
Lecture 3 hours.
Covers principles of property ownership and management in their business aspects, with special references to the law of California as it applies to community property, conveyances, deeds, trust deeds, mortgages, leases, brokerage, mechanics' liens, homesteads, wills and estates, and taxes. This course applies toward the mandatory requirement for the broker's license.

6 Legal Aspects of Real Estate II (3) CSU

Prerequisite: Real Estate 5.
Lecture 3 hours.
Covers legal aspects of real estate problems, an advanced study of agency contracts, commissions, an introduction to tax problems in residential and commercial property, advanced problems in security instruments, types of ownership, insurance, subdivisions and zoning, condemnation, construction liens, landlord-tenant, and an introduction to related agencies and activities, including loans (mineral, oil and gas), administrative procedures, and judicial review.

7 Real Estate Finance I (3) CSU

Prerequisite: Real Estate 1 and 3.
Lecture 3 hours.
Studies the forms and sources of financing property, construction and permanent financing. Covers the procedures for F. H. A., Cal. Vet, and V. A. financing, mortgage capital from savings and loan associations, commercial banks, insurance companies, and other sources, junior mortgages, appraising for mortgages, loan ratios, and leaseholds. This course applies toward the mandatory requirement for the broker's license.

8 Real Estate Finance II (3) CSU

Prerequisite: Real Estate 7.
Lecture 3 hours.
Studies financing of commercial, industrial, and special-purpose properties; mathematical analysis of return on equity dollars; effect of mortgage terms on debt service and prices; analysis of financial statements; pensions as a source of funds; technical aspects of construction financing; Real Estate Mortgage Trusts; corporate conglomerates; syndications; development of feasibility studies; subordinated land sales, sale and leaseback, all-inclusive deeds of trust, and other creative financing techniques; government participation through social action programs.

9 Real Estate Appraisal I (3) CSU

Prerequisite: Real Estate 1 and 3.
Lecture 3 hours.
Emphasizes appraisal methods for single-family residence. Covers valuation principles emphasizing the cost and comparative approaches. Factors influencing value are discussed, such as architecture styles, type of construction, lot valuation, depreciation, and other related subjects. This course is designed for those presently employed in the real estate field, or for those interested in the subject matter.

10 Real Estate Appraisal II (3) CSU

Prerequisite: Real Estate 9.
Lecture 3 hours.
Emphasizes appraisal methods for multiple-dwelling residences, such as apartment buildings and hotels, office buildings, shopping centers, industrial properties, and other income-producing properties. Reviews the Cost and Comparative techniques for valuation but emphasizes the Income Approach to valuation. Topics such as operating expenses, methods of capitalization, depreciation techniques, gross multiples, and other related subjects are discussed.

14 Property Management (3) CSU

Prerequisite: Real Estate 1.
Lecture 3 hours.
Presents information for real estate brokers and salespersons and owners of income-producing properties. Covers nature and types of property management, organization for management, leases and contracts, rent scheduling, selling of spaces and techniques of renting, tenant selection and supervision, relations with owners and budgets, purchasing and accounts, reports, ethics, and legal and professional relationships.

16 Income Tax Aspects of Real Estate (3) CSU

Prerequisite: Real Estate 1. Recommended for advanced real estate students.
Lecture 3 hours.
Covers the impact of Federal and California State income tax laws upon the purchase, sales, exchange, and use of real property. Includes depreciation, capital gains, installment sales, prepaid interest, and tax-saving opportunities.

18 Real Estate Investments I (3) CSU

Prerequisite: Real Estate 1.
Lecture 3 hours.
Provides an advanced course in the analysis of investment factors in evaluation of commercial, industrial, and residential properties. Includes site locations, zoning and other record restrictions, financing, feasibility studies, exchanges, sales and leaseback, cooperatives, and condominiums.

Cooperative Education — Work Experience

(See Business - Cooperative Education.)

RECREATION

116 Intramural Program Management (3) CSU

Lecture 3 hours.
Presents history, present status, and objectives of the intramural movement. Includes procedures concerning the organization, administration and supervision of the intramural program.

185 Directed Study — Recreation (1) CSU RPT 2

385 Directed Study — Recreation (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Recreation on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Recreation (1) CSU RPT 3

921 Cooperative Education — Recreation (2) CSU RPT 3

931 Cooperative Education — Recreation (3) CSU RPT 3

941 Cooperative Education — Recreation (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

SECRETARIAL SCIENCE

(See Office Administration)

SIGN LANGUAGE

(See American Sign Language)

SOCIOLOGY

1 Introduction to Sociology (3) UC:CSU (CAN SOC 2)

Lecture 3 hours.
Presents an orientation to the field of sociology including such sociological concepts and issues as cultures and subcultures; development of the self; sex and age roles; social class and caste; groups, communities, collectivities, and organizations; deviance; racism; human institutions: family, religion, education, government, economics; and population change in society.

2 American Social Problems (3) UC:CSU (CAN SOC 4)

Lecture 3 hours.
Deals with the sociological identification and analysis of contemporary social problems in the United States. Analyzes aspects of social and cultural change including those reflecting the pressing issues of personal demoralization and social disorganization.

3 Crime and Delinquency (3) UC:CSU

Lecture 3 hours.
Examines the nature and extent of crime and delinquency, theories of causation, types of juvenile and adult offenses, and efforts by society to cope with law violations. Emphasis is placed upon programs for prevention, correction, and rehabilitation.

4 Sociological Analysis (3) *UC:CSU

Lecture 3 hours.
Considers the logic of the scientific analysis of society and social institutions. Analyzes various methodological tools utilized in social science research and emphasizes clarification of the basic social science issues. Students will analyze and organize data collected in the field.

6 The Social Environment (3) UC:CSU

(Same as Environmental Science 4. Credit not given for both courses.)
Lecture 3 hours.
Investigates the movements, trends, and distribution of population and their effect upon the structure, character, and social life of rural, suburban, and urban societies, with particular emphasis upon changes in the United States. Combines an anthropological and sociological orientation to human ecology and demography.

7 Juvenile Delinquency (3) CSU

Lecture 3 hours.
Relates delinquency to other areas of social disorganization such as alcoholism and drug addiction. A course for students, parents, social workers, and teachers in the problems relating to maladjusted juveniles ranging in type from the potential delinquent to the institutionalized offender.

11 Ethnic and Racial Minorities in the United States (3) UC:CSU

Lecture 3 hours.
Emphasizes cultures of ethnic groups in the United States; explores 'race' and racism; examines the challenge of achieving unity with diversity in the United States.

13 Society and Personality (3) UC:CSU

Lecture 3 hours.
Studies the relationship between individual personality and the social milieu. Analyzes recent research investigations and evaluation of their findings. Devotes attention to child training and culture patterns in several western cultures compared to selected non-western cultures.

15 Religion and American Society (3) UC:CSU

Lecture 3 hours.
Explores contemporary religious forms and values as they relate to social behavior and political responsibility; considers traditional religions, religious subcultures, and cults; emphasizes United States but includes international perspective.

17 Introduction to Counseling (3) CSU

Lecture 3 hours.
Introduces the problems, techniques, and sociopsychological theories of counseling. Includes the study of behavior as a function of factors operating in groups including other intimate contacts, and provides an orientation in the techniques for the development of leadership and adjustment in behavior.

18 Introduction to Social Research Methods (3) *UC:CSU

Prerequisite: Completion of or concurrent enrollment in a sociology, psychology, anthropology, or any other social science course.
Lecture 3 hours.
Presents basic logical and philosophical problems. Includes discussion of certain aspects of the sociological methods and an introduction to specific techniques and procedures. Applies the scientific method to social phenomena and analyzes the techniques and methods of collecting, classifying, interpreting, and presenting social data.

28 The Family: A Sociological Approach (3) CSU

Lecture 3 hours.
Presents the family as a social institution, mate selection and marriage adjustment, structure and function, interaction, cross- cultural family patterns, historical changes, and contemporary social influences on the family.

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30 Technology and Modern Society (3) UC:CSU

Lecture 3 hours.
Explores the impact of technological change on the family, education, religion, medicine, and government. Considers popular treatments of future social trends and their implications for the individual and for social structure.

911 Cooperative Education — Sociology (1) CSU RPT 3

921 Cooperative Education — Sociology (2) CSU RPT 3

931 Cooperative Education — Sociology (3) CSU RPT 3

941 Cooperative Education — Sociology (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Sociology 4 and 18 combined, maximum one course.*

SPANISH

1 Elementary Spanish I (5) UC:CSU (CAN SPAN 2)

Corequisite: Concurrent enrollment in Spanish 101 required.
Recommendeded: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Students with previous knowledge of Spanish should enroll in a higher level. Native speakers should enroll in Spanish 4, 5, or 6.
Lecture 5 hours.
Uses a natural approach to assist the student to acquire proficiency in comprehension, speaking, reading and writing Spanish. Classes are conducted almost entirely in Spanish with emphasis on aural-oral skills. Course content includes material on contemporary life and culture in Spanish-speaking countries. Corresponds to the first year of high school Spanish.

2 Elementary Spanish II (5) UC:CSU (CAN SPAN 4)

Prerequisite: Spanish 1 or one year of high school Spanish with a grade of "C" or better in either case.
Corequisite: Concurrent enrollment in Spanish 101 required.
Recommended: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Students with previous knowledge of Spanish should enroll in a higher level. Native speakers should enroll in Spanish 4, 5, or 6.
Lecture 5 hours.
Continues with the natural approach and assists the student in the further development of understanding, speaking, reading and writing skills in Spanish. Classes are conducted almost entirely in Spanish and are aimed at the acquisition of fluency in spoken Spanish. Course content includes material on contemporary life and culture in Spanish-speaking countries. Corresponds to the second year of high school Spanish.

3 Intermediate Spanish I (5) UC:CSU (CAN SPAN 8)

Prerequisite: Spanish 2 or two years of high school Spanish with a grade of "C" or better in either case, or equivalent proficiency.
Corequisite: Concurrent enrollment in Spanish 101 required.
Recommended: Eligibility for English 101, or eligibility for and concurrent enrollment in English 28. Students with previous knowledge of Spanish should enroll in a higher level. Native speakers should enroll in Spanish 4, 5, or 6.
Note: Concurrent enrollment in Spanish 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Assists the student in the further development of proficiency in understanding, speaking, reading and writing Spanish. Reviews grammatical concepts learned in previous courses and emphasizes idiomatic construction and conversational ability. Introduction to the reading of literature. Discusses Spanish and Spanish-American life and problems.

4 Intermediate Spanish II (5) UC:CSU (CAN SPAN 10)

Prerequisite: Spanish 3 or three years of high school Spanish with a grade of "C" or better in either case, or equivalent proficiency.
Recommended: Concurrent enrolment in Spanish 101.
Note: Concurrent enrollment in Spanish 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Emphasizes vocabulary building and composition. Gives an introduction to Spanish or Spanish-American authors.

5 Advanced Spanish I (5) UC:CSU

Prerequisite: Spanish 4 with a grade of "C" or better, or equivalent proficiency.
Note: Concurrent enrollment in Spanish 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Introduces the student to some of the important movements in Latin-American literature. Includes readings in prose and poetry from representative authors of Latin-America and continues the study of advanced composition and grammar, through oral and written reports in Spanish.

6 Advanced Spanish II (5) UC:CSU

Prerequisite: Spanish 5 with a grade of "C" or better, or equivalent proficiency.
Note: Concurrent enrollment in Spanish 8 is strongly recommended for non-native speakers.
Lecture 5 hours.
Introduces some of the important movements in Latin-American literature. Readings in prose and poetry from representative authors of Latin America. Continues the study of advanced composition and grammar, oral, and written reports.

8 Conversational Spanish (2) CSU RPT 3

Prerequisite: Spanish 2 with a grade of "C" or better, or equivalent proficiency.
Recommended: Concurrent enrollment in Spanish 101.
Lecture 2 hours.
Develops conversational skill and fluency. Emphasizes idioms, correct use of tenses of Spanish verbs, and fundamental sentence structure. Audio-visual aids supplement the program of instruction.

10 Latin-American Civilization (3) CSU

(Same as History 23. Credit not given for both courses.)
Lecture 3 hours.
A study of the diverse cultures of Spanish and Portuguese speaking countries and peoples, together with the themes, institutions, beliefs, and symbols that have endured through time and their quest to define and understand their identity in their actions, in their memories of the past, and in their dreams of the future.

12 Contemporary Mexican Literature (3) UC:CSU

(Humanities Credit)
NOTE: Readings are in English translation. Knowledge of the Spanish language is not required.
Lecture 3 hours.
This course consists of lectures and discussions in English on the literature and history of Mexico during the twentieth century with a background of earlier works. Students will read translations of principal writers. This course is the same as Chicano Studies 42, Contemporary Mexican Literature, which is offered by other colleges in the Los Angeles Community College District.

15 Great Books of Latin American Literature (3) UC:CSU

(Humanities Credit)
NOTE: Readings are in English translation. Knowledge of the Spanish language is not required.
Lecture 3 hours.
The purpose of this course is to introduce to the student selected writings of Latin American authors such as Mariano Azuela, Juan Rulfo, Ricardo Guiraldes, Romulo Gallegos, Miguel Asturias, Augustin Yanez, Jose Ruben Romero, Gregorio Lopez y Fuentes, Mario Vargas Llosa, Julio Cortazar, Manlio Argueta, Jorge Icaza, Jose Donoso, Manuel Puig and others with particular emphasis on contemporary writers and the "Boom Movement". All readings, lectures and discussions will be in English.

25 Spanish American Short Story in Translation (3) UC:CSU

(Humanities Credit)
NOTE: All readings and discussions are in English. No knowledge of the Spanish language is required.
Recommended: Eligibility for English 28.
Lecture 3 hours.
A survey of the different literary movements and tendencies that have marked the evolution of Spanish American literature from the 1830's to the boom and beyond: Romanticism, Realism, Naturalism, Modernism, Criollismo, Cosmopolitanism, and Surrealism.

26 Understanding Latin America through Film (3) CSU

(Humanities credit)
Lecture 3 hours.
Examines feature films as a communicative art form that offers a thematic approach to the understanding of the diverse multicultures of Latin America. The films analyzed reflect four basic themes: Transition and Change, Cultural Contrasts, Human Rights, and Women and Society. All readings, lectures, and discussions are in English. No knowledge of Spanish is necessary.

27 Cultural Awareness through Advanced Conversation (3) CSU

(Humanities credit)
Prerequisite: Spanish 3 or equivalent proficiency.
Lecture 3 hours.
Develops oral facility and cultural awareness, emphasizing speaking and understanding Spanish in everyday situations common to Latin America. Good grasp of grammar is a prerequisite. Prepares student to live in a Spanish-speaking country.

101 Spanish Language Laboratory (1) CSU RPT 3

Corequisite: Students must be enrolled in any Spanish Language Course.
Note: Required of all students enrolled in Spanish 1, 2, and 3.
Laboratory 1 hour.
(This is a credit/no-credit course. Students receive one unit of college credit (with no letter grade) by spending at least 16 hours over the semester using the equipment and regularly handing in the lab workbook assignments to their instructor.
This language workshop uses multi-media (video, audio and computers) to enhance instruction. Students must be currently enrolled in a Spanish language course. The workshop meets on the first floor of the Library in the TLC and/or ML 2114.

185 Directed Study — Spanish (1) †UC:CSU RPT 2

285 Directed Study — Spanish (2) †UC:CSU

385 Directed Study — Spanish (3) †UC:CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Spanish on a contract basis under the direction of a supervising instructor.

SPECIAL EDUCATION

(See also Learning Skills).

1 Introduction and Survey to Learning Disabilities (3) (NDA) RPT 3

(Formerly Learning Skills 12)
Prerequisite: Learning Skills 185.
Lecture 3 hours.
Course provides intensive introduction to learning disabilities. Students will read literature related to subject, be able to identify varieties of learning disabilities and related compensatory strategies for particular learning deficits. Students will identify personal intervention strategies to maximize academic efforts.

2 Reading and Composition for the Learning Disabled Student (3) (NDA) RPT 3

(Formerly Learning Skills 14)
Prerequisite: Learning Skills 185.
Lecture 3 hours.
Special Education 2 will provide learning disabled students an opportunity to improve reading and writing skills through clinical assessment and individualized prescriptive tutorials that include lectures, small group discussions and one-to-one assistance in reading, writing and verbalizing skills.

3 Computer-Directed Writing Skills (2) (NDA) RPT 3

(Formerly Learning Skills 21)
Prerequisite: Learning Skills 185, Special Education 85.
Lecture 1 hour; laboratory 2 hours.
Students will master pre-composition and composition skills in order to write simple narrative/informative essays. Using IBM-based computer systems, learning disabled students will develop basic composition skills and demonstrate mastery of grammar, punctuation and spelling.

†UC: See page 78.

8 Adaptive Personal Development (2) (NDA)

Lecture 2 hours.
Group study of selected topics, the titles to be specified in the schedule of classes.

10 Basic Vocabulary for the Hearing Impaired I (3) (NDA) RPT 3

Lecture 3 hours.
Provides the opportunity to learn essential words encountered in college reading. Applies the words in student-composed sentences. Compares and contrasts meanings in Ameslan with meanings in English. Develops spelling ability and emphasizes the habit of using the dictionary and other tools for building vocabulary.

Normally offered in the Fall semester.

11 Basic Vocabulary for the Hearing-Impaired II (3) (NDA) RPT 3

Lecture 3 hours.
Continues vocabulary development of hearing-impaired students for the purpose of improving reading and writing skills.

Normally offered in the Spring semester.

21 Reading Clinic (3) (NDA) RPT 3

Lecture 3 hours.
Assists the hearing-impaired student in developing sight vocabulary, reading comprehension, and word attack skills. Provides opportunity for increasing speed and efficiency in reading.

24 Practical Mathematics for the Hearing Impaired (3) (NDA) RPT 3

Lecture 3 hours.
Covers mathematical concepts up to and including some fundamental algebra. The concepts of fractions, decimals, percent, measurement, and word problem attack skills will be emphasized.

29 English for the Hearing Impaired Student (6) (NDA) RPT 3

Lecture 6 hours.
Assists the student who is hearing impaired with upgrading English language skills on an individual basis. The course emphasizes vocabulary, reading and writing skills.

34 Career Planning and Preparation for Disabled Students (1) (NDA) RPT 1

Lecture 1 hour.
Comprehensive approach to Career Planning for Disabled Students. This course is designed to help students define valid career choices and prepare for job readiness. Topics include: career assessment inventories, job search strategies; including resume writing and interviewing. Rights/Legislative protection.

35 Computer-Assisted Vocabulary Development (1) (NDA) RPT 3

Laboratory 2 hours.
Students will work directly under the supervision of an instructor, and work with Special Services microcomputers which will perform the instruction and testing of new vocabulary. Students can learn up to 2900 words.

49 Computer-Assisted Spelling Development (1) (NDA) RPT 2

Laboratory 2 hours.
Students use a computer to learn, practice and be tested on up to 750 commonly misspelled words. All work is individualized, and students learn only those words that they do not know.

85 Adaptive Word Processing (1) (NDA) RPT 1

Prerequisite: Knowledge of keyboarding
Laboratory 2 hours.
Provides hands-on training in basic word processing skills for students who because of their disability would otherwise be unable to access the computer. This course is not intended to train students for a job in word processing.

SPEECH COMMUNICATION

101 Oral Communication I (3) UC:CSU (CAN SPCH 4)

Prerequisite: Eligibility for English 28 recommended.
Lecture 3 hours.
Offers training in the theory of speech communication and the practice of effective preparation and delivery of structured oral presentations.

102 Oral Communication II (3) UC:CSU

Prerequisite: Speech Communication 101.
Lecture 3 hours.
This course is designed to broaden communication skills by training the student in critical thinking, reasoning, supporting, and evaluating. Structured oral presentations are used to gain these skills.

103 Business and Professional Speaking (3) CSU RPT 2

Lecture 3 hours.
This course enables the student to apply speech communication skills to the business setting. Structured oral presentations are used to gain the skills required for business meetings, conferences, interviews and discussions.

104 Argumentation (3) UC:CSU (CAN SPCH 6)

Prerequisite: Eligibility for English 28 recommended.
Lecture 3 hours.
Explores the critical thinking process, emphasizing the use of logic, reasoning, and evidence in the presentation and analysis of sound arguments. Students will participate in debates.

106 Forensics (2) CSU RPT 3

May be offered in (1) unit modules.
Laboratory 6 hours.
This laboratory course is designed for speech tournament competition, including speaking in and evaluation of individual and team speaking events.

111 Voice and Articulation (3) CSU

Lecture 3 hours.
Provides speech experiences to develop awareness of correct vowel and consonant articulation through the use of phonetic practice. Covers vocabulary, phonetic and diacritical symbols, alphabet and the vocal mechanism.

113 English Speech as a Second Language (3) CSU RPT 1

Lecture 3 hours.
Stresses speaking of English, pronunciation, idiomatic expressions, phraseology, rhythmic inflections, grammar, vocabulary building, and oral composition. The course is designed for students with foreign language backgrounds.

121 The Process of Interpersonal Communication (3) CSU (CAN SPCH 8)

Prerequisite: Eligibility for English 28 recommended.
Lecture 3 hours.
This lecture/activity/discussion course examines the theory, scope and purpose of human communication.

130 Introduction to Oral Interpretation of Literature (3) UC:CSU

Prerequisite: Eligibility for English 28 recommended.
Lecture 3 hours.
This course develops the student's ability to understand and appreciate various forms of literary art. Emphasis is placed on the selection, analysis, evaluation, and adaptation of significant literary materials as well as on their artistically effective oral presentation.

185 Directed Study – Speech Communication (1) †UC:CSU RPT 2

285 Directed Study – Speech Communication (2) †UC:CSU

385 Directed Study – Speech Communication (3) †UC:CSU

Prerequisite: Speech Communication 101, 102, or 104.
Conference 1 hour per unit.
Allows students to pursue directed, individualized study in the field of Speech Communication on a contract basis under the direction of a supervising instructor.

†UC: See page 78.

911 Cooperative Education — Speech Communication (1) CSU RPT 3

921 Cooperative Education — Speech Communication (2) CSU RPT 3

931 Cooperative Education — Speech Communication (3) CSU RPT 3

941 Cooperative Education — Speech Communication (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the-job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

STATISTICS

1 Elementary Statistics I for the Social Sciences (3) UC:CSU (CAN PSY 6)

Prerequisite: Intermediate Algebra.
Note: Students may be required to present proof of completion of Intermediate Algebra or its equivalent at the first class meeting.
Lecture 3 hours.
Covers both descriptive and inferential statistics. Topics include methods used to collect and describe data, central tendency, variability, the normal curve, correlation, prediction, sampling distributions, probability and hypothesis testing. Emphasis is on conceptualization as well as data analysis.

**UC Credit limit: Statistics 1 combined with Business 15 and Mathematics 227, maximum one course.*

185 Directed Study — Statistics (1) CSU RPT 2

285 Directed Study — Statistics (2) CSU

385 Directed Study — Statistics (3) CSU

Conference 1 hour per unit.
Allows students to pursue Directed Study in Statistics on a contract basis under the direction of a supervising instructor.

STUDY SKILLS

(See Psychology and Developmental Communications)

SUPERVISION

1 Elements of Supervision (3) CSU

Lecture 3 hours.
Introduces in general terms the total responsibilities of a supervisor in industry. Topics include organization, duties and responsibilities, human relations, grievances, training, rating promotion, quality-quantity control and management- employee relations.

2 Basic Psychology for Supervisors (3) CSU

Prerequisite: Supervision 1.
Lecture 3 hours.
Teaches the basic principles of dealing with people in business and industry to assist the supervisor in understanding the people with whom he works. Emphasizes the psychological aspects of emotion, attitudes, perceptions, personalities, learning processes, motivation, and job adjustment.

6 Labor-Management Relations (3)

Lecture 3 hours.
Studies employer-employee relations in government and business. Includes the supervisor's responsibility for effective management-employee relations; historical background of unions and other employee groups; impact and effect of federal, state and local legislation on wages, hours, grievances, discipline and other working conditions; and employer and employee rights and obligations under a civil service system. Considers the role of employee organizations in government agencies versus private industry.

11 Oral Communications (3)

Lecture 3 hours.
Provides classroom practice to improve speaking skills necessary for management. Builds personal confidence. Develops poise, vocabulary, gestures and the ability to speak extemporaneously. Uses role playing to develop speaking skills in typical business situations. Promotes leadership characteristics, initiative and drive.

13 Safety Training and Fire Prevention (3)

Lecture 3 hours.
Gives a broad background in the principles of Occupational Safety and Accident Prevention. Intended for all personnel who are involved in accident prevention programs in private industry or government agencies.

THEATER

100 Introduction to the Theater (3) UC:CSU (CAN DRAM 18)

Lecture 3 hours.
A survey course covering the works of theater. The class includes elements of dramatic literature, play reading, and the study of acting and the technical arts of theater.

105 Drama Digest (1) CSU RPT 3

Lecture 1 hour.
Presents a varied view of the theater and cinema arts in Los Angeles. Guest speakers such as agents, directors, actors, and faculty provide the student an opportunity to ask questions and gain contact with the professional world. Acting scenes from classes and/or productions are also presented. Grade is based on attendance.

Recommended for all majors.

110 History of the World Theater (3) UC:CSU

Lecture 3 hours.
Studies the development of the theater from earliest periods to the present. Play readings, films, and historical trends are discussed.

115 History of the American Theater (3) UC:CSU

Lecture 3 hours.
Considers the march of Theater Arts in the United States including development from early beginnings in America to the present.

125 Dramatic Literature (3) UC:CSU

(Same as English 213. Credit not given for both courses.)
Lecture 3 hours.
Surveys the major dramatic forms in the Western World from the early beginnings to the present time. Play reading for pleasure, appreciation, and interpretation are stressed. Analysis and criticism follow.

130 Playwriting (3) CSU RPT 1

Lecture 3 hours.
Offers an opportunity to present original play ideas and treatments to be analyzed and criticized. Through class lectures and discussion of text materials, students will attain a deeper knowledge of the dramatic construction of a play.

225 Beginning Direction (3) *UC:CSU

Prerequisite: Theater 270, and one technical theater class (Theater 300 through 400).
Lecture 3 hours.
Leads the student from the basic script through all the elements necessary to get the play on stage: interpretation, casting, scheduling, movement, blocking, business, pace and timing. Provides firm guidance for beginning directors in the technical handling of a script from preparation of a prompt script to working out of technical plots.

232 Play Production (2) *UC:CSU RPT 3

Prerequisite: Theater 270, and 342 or 422 or 411 (may be concurrently registered in Theater 342, 411 or 422). Required audition will be held the first week during which casts are selected for faculty directed productions.
Laboratory 6 hours.
Represents the culmination of the student's acting experience. Here students demonstrate their ability to perform in fully staged productions for audiences of the general public, and are encouraged, wherever possible, to develop from minor roles to the creation of more demanding characterizations.

240 Voice and Articulation for the Theater (3) **UC:CSU

Lecture 3 hours.
Deals with the fundamentals of good voice, good speech, and dynamic vocal expressiveness. Toward these goals the following elements are studied: breathing, posture, resonance, loudness, timing, pitch, and clear articulation.

243 Dialects (2) CSU

Prerequisite: Theater 240.
Lecture 1 hour; laboratory 2 hours.
Provides training in phonics and in the performance of regional and foreign dialects which are most applicable to the theater artist.

250 Children's Theater Production (2) CSU RPT 3

Prerequisite: Theater 270, and 342, 411 or 422 (May be concurrently registered in Theater 342, 411 or 422).
Laboratory 6 hours.
Required auditions are held the first week of class, during which casts are selected for faculty directed productions. This class is identical to Theater 232, the single exception being the kind of material presented.

262 Special Projects (2) †UC:CSU RPT 3

Laboratory 4 hours.
Students are given opportunity to plan, rehearse, stage and produce projects for presentation before student audiences, or otherwise increase knowledge and experience in dance theater.

265 Movement for the Actor (2) **UC:CSU RPT 1

Lecture 1 hour; laboratory 2 hours.
Selections from plays, poetry and prose are utilized to train the actor to approach the text from a "movement" point of view. Exercises and improvisations in sensory-motor awareness lead to flexibility, balance, energy and expressiveness on stage.

270 Beginning Acting (3) **UC:CSU (CAN DRAM 8)

Lecture 3 hours.
Provides instruction in the basic techniques of acting. Prepares the student for subsequent acting classes, and meets one of the requirements for the production class.

271 Intermediate Acting (2) **UC:CSU (CAN DRAM 22)

Prerequisite: Theater 270
Lecture 1 hour; laboratory 2 hours.
Provides more advanced instruction in acting fundamentals through the medium of scene study. Greater depth is expected in both characterization and script analysis.

273 Advanced Acting (2) **UC:CSU RPT 1

Prerequisite: Theater 271
Lecture 1 hour; laboratory 2 hours.
Continues the in-depth work of Intermediate Acting utilizing scenes from mature works of drama. Presentational skills are sharpened as the student is readied for performance.

291 Rehearsals and Performances (1) *UC:CSU RPT 3

Laboratory 3 hours, plus rehearsals and performances.
In this course students are actively involved in the production of plays for college and public performances. Primary emphasis is on the ability to perform acting and stage crew assignments. Students may also work in the areas of publicity, house management, technical theater, or costuming.

292 Rehearsals and Performances (2) *UC:CSU RPT 3

Recommended: Theatre 270, 342, 422, or equivalent. Auditions and interviews are held the first week of classes, during which casts and technical crews are selected for productions.
Laboratory 6 hours, plus rehearsals and performances.
In this course students are actively involved in the production of plays for college and public performances. Primary emphasis is on the ability to perform acting and stage crew assignments. Students may also work in the areas of publicity, house management, technical theater, or costuming.

300 Introduction to Stage Craft (3) *UC:CSU (CAN DRAM 12)

Lecture 3 hours.
Through lecture and laboratory demonstration, covers all phases of scene construction, painting, mounting and running of stage scenery. Also covers the use of sound, lighting equipment, and stage properties. Additional instruction is given in stage terminology and the organization and management of stage crew activities.

310 Introduction to Theatrical Lighting (3) *UC:CSU

Prerequisite: Theater 300.
Lecture 3 hours.
Presents the basic principles of theatrical lighting, designed to familiarize the student with the equipment, the medium, and the design functions of stage lighting.

315 Introduction to Theatrical Scenic Design (3) *UC:CSU

Prerequisite: Theater 300.
Lecture 3 hours.
Covers training and practice in the problems of designing for stage including construction and painting techniques, development of the design concept, budgeting, and modeling the design.

342 Technical Stage Production (2) *UC:CSU RPT 3

Note: Meets Theater 232 prerequisite.
Laboratory 6 hours.
Provides work in all technical aspects of play production in terms of study and laboratory practice, including stage managing, lighting, scene construction, painting, designing, and use of stage equipment. Offers experience in stage crew and technical direction. Required of all first and second semester students.

400 Costume Periods and Styles (3) CSU

Lecture 3 hours.
Studies major developments in costume during successive historic periods. Explores the influence of costumes on the movement, manners, and morals of the times. Introduces research methods and sources, and application and adaptation of period detail and style to the wearing and construction of stage costumes.

411 Costuming for the Theater (3) *UC:CSU RPT 2

Note: Meets Theater 232 prerequisite.
Lecture 2 hours; laboratory 2 hours.
Surveys theatrical costuming as a craft and as a design art. Introduces design research and principles, pattern and construction techniques, sewing equipment use and maintenance, and the functions of costume personnel in production work.

422 Applied Costuming for the Theater (2) CSU RPT 3

Note: Meets Theater 232 prerequisite.
Laboratory 6 hours.
Provides practical experiences in various areas of costume production and presentation. Assignments include: assistance in costume construction and selection; wardrobe mistress and master responsibilities; maintenance and storage of costumes. All work assignments are on current department productions.

450 Beginning Stage Make-Up (2) *UC:CSU

Lecture 1 hour; laboratory 3 hours.
Studies the make-up required in stage performances and gives practice in its application. Gives students opportunity to use professional make-up materials approved by the instructor.
Lab Work: Assignments are on current department productions.

†UC: See page 78.

185 Directed Study — Theater (1) †UC:CSU RPT 2

285 Directed Study — Theater (2) †UC:CSU

385 Directed Study — Theater (3) †UC:CSU

Prerequisite: None.
Conference 1 hour per unit.
Allows students to pursue Directed Study in Theater on a contract basis under the direction of a supervising instructor.

911 Cooperative Education — Theater (1) CSU RPT 3

921 Cooperative Education — Theater (2) CSU RPT 3

931 Cooperative Education — Theater (3) CSU RPT 3

941 Cooperative Education — Theater (4) CSU RPT 3

Prerequisite: Employment in a field related to the student's major as verified by the signature of the Cooperative Education Advisor.

Supervised training is conducted in the form of on-the job training in an employment area that will enhance the student's educational goals on campus.

Limits to transfer credit: See Cooperative Education Credit Guide.

**UC Credit Limit: Any or all courses combined, maximum 12 units.*

***UC Credit Limit: Any or all courses combined, maximum 12 units.*

TOOL AND MANUFACTURING

(See listing under Industrial Technology - Machine Shop)

TYPEWRITING

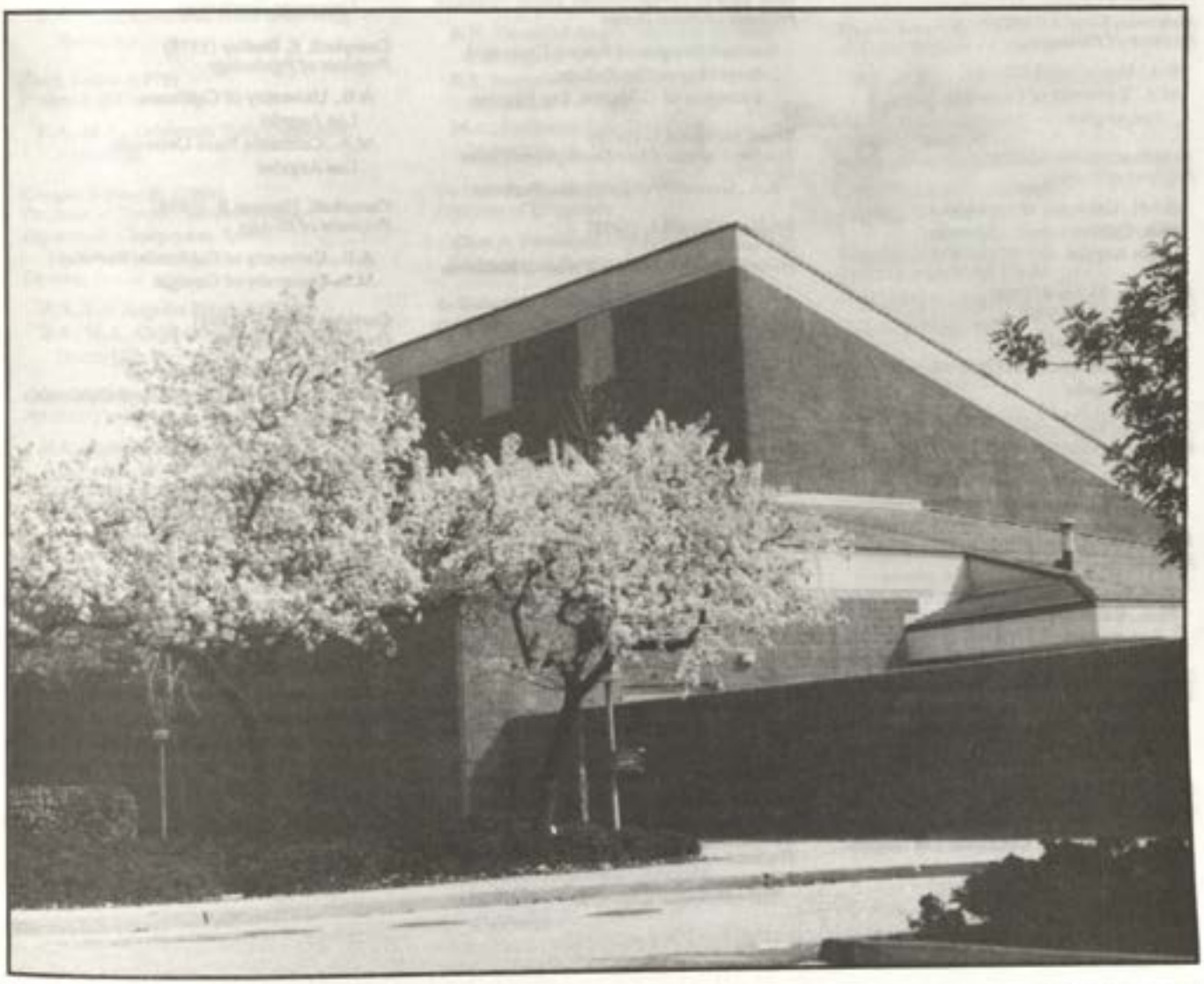
(See listing under Office Administration)

WELDING

(See listing under Industrial Technology - Welding)

WORD PROCESSING

(See listing under Office Administration)



†UC: See page 78.

FACULTY

Accardo, Donna L. (1989)
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B.A., University of Nevada, Reno
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Ahmadian, Jack (1980)
Professor of Mathematics

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Ahrens, Stephen R. (1980)
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B.S., University of Vermont
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Allocco, Brenda K. (1986)
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Anderson, Donald (1962)
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Cohen, Jeffrey L. (1977)
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Cohn, Dianne (1978)
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Crozer, Norman P. (1974)
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Daruty, Kathy (1979)
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Goerss, Harold F. (1971)
Professor of Economics
Department Chairperson, Political Science/Economics

B.A., M.A., California State University, San Diego

Goldbloom, Erwin M. (1965)
Professor of Physical Education

B.S., M.S., University of California, Los Angeles

Goldblum, S. M. (1970)
Professor of History

B.A., M.S., California State University, Los Angeles

Goodman, Isidore I. (1984)
Professor of Chemistry
Department Co-Chairperson, Chemistry

B.S., State University of New York, Albany
Ph.D., University of California, Los Angeles

Gordon, Mitchell A. (1984)
Professor of Mathematics

B.S., University of British Columbia
M.A., University of California, Los Angeles

Gottlieb, Miriam (1992)
Work Ability Specialist, Special Services

B.A., University of California, Santa Barbara
M.A., California State University, Northridge

Gottlieb, Seymour (1970)
Professor of Mathematics

B.S., City College, New York

Grear, Valorie L. (1979)
Assistant Professor, Theater

BFA, Memphis State University
MFA, Cornell University

Greenberg, Lionel (1966)
Professor of Music

B.A., B.Ped., University of Manitoba
M.M., University of California

Greer, E. Fontaine (1989)
Associate Professor of English

B.A., M.A., California State University, Northridge

Habib, Nicholas T. (1976)
Professor of Philosophy

B.A., University of California, Los Angeles
M.A., California State University, Northridge
Ph.D., Claremont Graduate School

Haile, Lynne H. (1968)
Professor of Physical Education

B.S., M.S., University of Southern California

Hall, Sharon M. (1971)
Professor of Nursing
Department Chairperson, Nursing

B.S.N., California State University, Los Angeles
M.N., University of California, Los Angeles
Ed.D., Brigham Young University

Hankammer, Larry (1968)
Professor of Physical Education

B.A., University of Southern California

Hardesty, James N. (1965)
Professor of Mathematics

B.S., University of Illinois

Harwick, Betty C. B. (1966)
Professor of Sociology
Department Chairperson, Philosophy-Sociology

B.A., M.A., California State University, Northridge

Haskell, Barry S. (1958)
Professor of Geology

B.S., M.A., University of Southern California

Heckel, Russel H. (1969)
Professor of History

B.S. Ed., Eastern Illinois University
M.A., Michigan State University

Herbst, Cynthia L. K. (1979)
Professor of American Sign Language/Interpreter Education

B.A., California State University, Northridge
M.S., Western Maryland College

Hirschl, Milton (1958)
Professor of Art

B.S., Ohio State University
M.F.A., University of Southern California

Hobbs, Gail L. (1985)
Professor of Geography

B.A., Concordia College
M.A., University of California, Los Angeles

Hoffmann, Edmund C. (1970)
Professor of Computer Science and Information Technology

B.S., M.B.A., University of Southern California

Holden, Joan M. (1988)
Assistant Professor of Counseling
Department Chairperson, Counseling

B.S., Colorado State University
M.A., Goddard College

Hopkins, Keith E. (1968)
Professor of Physical Education

B.S., M.S., University of California, Los Angeles
Certificate in Physical Therapy, University of Southern California
Ph.D., Lawrence University

Horn, Larry (1976)
Professor of Sociology

M.A., Brooklyn College
Ph.D., University of Southern California

Horne, Janet B. (1979)
Professor of Office Administration
Department Chairperson, Office Administration

A.A., Long Beach City College
B.S., M.S., California State University, Long Beach

Horstein, Charlotte G. (1986)
Professor of Nursing

B.S., California State University, Los Angeles
M.S., University of California, Los Angeles

Horvath, Roma J. (1981)
Associate Professor of Theater
Department Co-Chairperson, Theater

B.A., San Diego State University

Hoskinson, Marjorie H. (1969)
Professor of English

B.A., M.A., University of California, Los Angeles

Houston, Ann H. (1969)
Professor of Biology
Department Chairperson, Life Science

B.A., Smith College
M.A., University of Michigan

Hren, Wayne L. (1965)
Professor of Psychology

B.A., University of California, Los Angeles
M.A., Pepperdine University

Hume, M. Carlyle (1975)
Professor of Music

B.M.E., M.M., Indiana University, Bloomington
Ed.D., University of Michigan, Ann Arbor

Humphrey, Larry W. (1985)
Associate Professor of Industrial Technology

A.A., Los Angeles Pierce College
B.A., California State University, Los Angeles

Ikkanda, J. Martin (1971)
Professor of Biology

B.A., California State University, Long Beach
M.S., Oregon State University

James, Anna Gale (1966)
Professor of Psychology
Department Chairperson, Psychology

B.A., Vanderbilt University
M.A., University of Kentucky

James, John Robert (1989)
Associate Professor of Counseling

B.A., California State University, Long Beach
M.S., University of Southern California

Johnson, James C. (1970)
Professor of Industrial Technology

Standard Designated Subject Credential, University of California, Los Angeles, Oklahoma University

Johnson, Jodi A. (1986)
Associate Professor of English

B.A., M.A., California State University, Northridge

Johnson, J. Thomas (1972)
Professor of Philosophy

B.A., University of Minnesota
M.A., Columbia University

Jones, Edwin A. (1986)
Professor of Political Science

A.A., Glendale College
B.A., Occidental College
M.A., California State University, Los Angeles

Kallonzes, Carole S. (1968)
Professor of Library Science

B.A., M.L.S., University of California, Los Angeles

Kaufler, Sol D. (1968)
Professor of Economics

A.B., Brooklyn College
M.S., M.A., University of Southern California

Kinchloe, Ralph (1970)
Professor of Biology

B.A., M.S., Brigham Young University

Kistel, Paul D. (1977)
Professor of English

B.A., Loyola University, Los Angeles
M.A., Ph.D., University of California, Los Angeles

Klaus, Bernard M. (1965)
Professor of History

B.A., Roosevelt College
M.A., Ph.D., University of California, Los Angeles

Koller, Evelyn M. (1986)
Professor of Biology

B.A., M.S., California State University, Northridge

Krahn, Helen M. (1980)
Professor of Counseling

B.A., Capital University
M.A., Ohio State University

Kramer, Craig S. (1989)
Associate Professor of English

B.A., University of California, Santa Barbara
M.A., University of Michigan

Kramer, G. Thomas (1971)
Professor of Journalism

B.A., University of California, Berkeley
M.S., University of California, Los Angeles

Krause, Gary B. (1979)
Professor of Landscape Architecture

B.S., California State Polytechnic University, Pomona

Krikorian, Lawrence V. (1988)
Associate Professor of English

B.A., Point Loma College
M.A., University of California, Los Angeles

Krimm, Susan (1982)
Professor of Computer Science and Information Technology

B.A., University of California, Los Angeles

Kuczynski, John (1968)
Professor of Art
Department Chairperson, Art

A.B., M.A., University of California, Los Angeles

Lagerstrom, James (1966)
Professor of Speech Communication

B.A., University of California, Berkeley
M.Div., Fuller Theological Seminary
M.A., University of Southern California

Lange, Donna L. (1975)
Professor of Physical Education/Health

B.S., Mankato State College, Minnesota
M.S., California Polytechnic State College, San Luis Obispo

Larson, Eugene S. (1970)
Professor of History
Director, Honors Program

B.A., Occidental College
C. Phil., University of California, Los Angeles

Lee, Mary E. (1994)
President

B.A., California State University, Sacramento
M.A., Ph.D., University of Southern California

Lee, Stephen (1984)
Professor of Geology

B.S., University of Illinois
C. Phil., University of California, Los Angeles

Lenler, Minnette G. (1984)
Associate Professor of English

B.A., California State University, Northridge
M.A., University of Iowa
M.A., Ph.D., University of Southern California

Leventhal, Robert M. (1963)
Professor of History

B.A., M.A., University of California, Los Angeles

Levy, Norman S. (1985)
Professor of Political Science

B.A., University of California, Los Angeles
M.A., California State University, Northridge

Lewis, Henry E. (1963)
Professor of Physical Education
Department Co-Chairperson, Physical Education–Men

B.A., M.A., California State University, Los Angeles
Ph.D., Lawrence University

Lieu, Sandi (1985)
Associate Professor of Mathematics

B.S. Lehigh University
Ph.D., Boston College

Livezey, Jack (1983)
Associate Professor of Computer Science and Information Technology

B.S.E.E., University of California, Berkeley

Lofrano, Robert J. (1989)
Associate Professor of Physical Education

B.A. California State University, Northridge

Logan, J. Barrie (1972)
Professor of Chemistry
Coordinator, Instructional Planning and Accreditation

B.S., University of Texas
Ph.D., California Institute of Technology

Lopez, Henry P. (1966)
Professor of Modern Languages
Counselor

B.A., M.A., University of Southern California

Love, Don (1976)
Vice President, Administration

B.Ed., Duquesne University, Pittsburgh, Pennsylvania
M.A., University of Southern California
Ph.D., Western Pacific University

Luke, Roy (1964)
Professor of Mathematics

B.S., M.A., University of California, Los Angeles

Lyons, Robert M. (1964)
Professor of Business Education

B.S., M.B.A., University of California, Los Angeles

MacMaster, Joan H. (1969)
Professor of History
Department Chairperson, History/Humanities

B.A., Douglass College
M.A., California State University, Sacramento

Madson, Derald L. (1969)
Professor of Biology

B.S., Winona State College
M.S., University of Oregon

Marano, Damiano A. (1989)
Associate Professor of Modern Languages

B.A., Hunter College
M.A., M.B.A., University of California, Los Angeles

Martinez, Carlos (1992)
Dean, Academic Affairs

A.A., Los Angeles City College
B.A., M.A., California State University, Los Angeles

Martinez, Robert M. (1992)
Assistant Professor of Mathematics

B.A., M.S., California State University, Northridge

Mazeika, Edward R. (1986)
Associate Professor of Psychology

A.A., Santa Monica College
B.A., California State University, Los Angeles
M.A.,Pepperdine University
Ph.D., University of Southern California

McCaslin, Joy (1988)
Acting Associate Dean, Student Services

B.A., University of California, Santa Barbara
M.A., University of California, Riverside
Ph.D., University of California, Los Angeles

McCutcheon, Thomas (1983)
Associate Professor of Mathematics

B.S., Harvey Mudd College
Ph.D., University of California, Los Angeles

McFerran, Douglass (1966)
Professor of Philosophy

A.B., M.A., Gonzaga University

McWilliams, Marian (1958)
Professor of Physical Education

B.A., University of California, Santa Barbara
M.A., California State University, Los Angeles

Mehlman, Mary R. (1964)
Professor of Mathematics

B.A., Hunter College
M.A., Kent State University

Merrill, Dominique L. (1984)
Professor of Modern Languages

B.A., M.A., University of California, Los Angeles

Meyer, W. Craig (1975)
Professor of Geology

B.S., Tulane University
M.S., University of Southern California

Meyers, Paul A. (1974)
Professor of Biology

B.A., Whitman College
M.A., Ph.D., University of California, Santa Barbara

Mezlere, Mary J. (1965)
Professor of English

B.A., California State University, Northridge
M.A., University of Southern California

Migliore, Barbara S. (1970)
Professor of Nursing

B.S., DePaul University

Moffatt, Constance J. (1991)
Assistant Professor of Art

B.A., California State University, Northridge
M.A., Notre Dame
M.A., Ph.D., University of California, Los Angeles

Mull, Charles H. (1982)
Professor of Industrial Technology

B.A., San Diego State University
M.A., California Lutheran College

Munsey, Robert E., Jr. (1965)
Professor of Industrial Technology

B.A., Fresno State College
M.A., California State University, Los Angeles

New, Dennis (1984)
Professor of Mathematics

B.S., California Institute of Technology
M.A., University of California, Los Angeles

Nordberg, Paul C. (1976)
Associate Professor of Art

Class A Vocational Credential, University of California, Los Angeles

Norlund, William E. (1967)
Professor of Physics
Vice President, Academic Affairs

B.S., University of Minnesota
M.S., College of William and Mary
Ed.D., Pepperdine University

Obayani, Kambon (1991)
Assistant Professor of English

B.A., Brown University
M.F.A., University of Iowa (Writer's Workshop)

Obrecht, Frederick P. (1992)
Professor of English
Resource Development Officer

B.A., University of California, Los Angeles
M.A., California State University, Northridge

O'Dea, Marcia C. (1991)
Professor of Spanish

B.A., California State University, Los Angeles
M.A., University of Notre Dame

O'Dea, Thomas F. (1985)
Professor of Modern Languages

A.B., M.A., University of Notre Dame
M.I.M., American Graduate School of International Management

Odello, Betty (1980)
Associate Professor of Philosophy

B.S.N., Creighton University
M.N., University of California, Los Angeles

Ogar, George W. (1989)
Associate Professor of Chemistry
Department Co-Chairperson, Chemistry

B.S., M.A., University of Lowell
Ph.D., Brown University

O'Hanlon, Lynne (1969)
Professor of Computer Science

B.A., M.A., California State University, Northridge

O'Neil, Robert B. (1989)
Professor of Journalism

B.A., Creighton University
M.A., Syracuse University

Ono, Robert K. (1981)
Professor of Chemistry

B.S., University of California, Los Angeles
M.S., California State University, Long Beach
Ph.D., University of California, Irvine

Osborne, Philip R. (1980)
Professor of Vocational Education
Director, Cooperative Education

A.A., Los Angeles Pierce College
Vocational Education Credential

Pam, Irene S. (1974)
Professor of Counseling

B.S., College of the City of New York
M.A., California State University, Northridge

Pandey, Carol J. (1971)
Professor of Psychology

B.A., University of California, Los Angeles
M.A., Ph.D., University of Southern California

Partington, Alfred M. (1978)
Professor of Business Administration

B.B.A., University of Miami
C.P.A., Florida and California

Pawlicki, Michael J. (1976)
Professor of Music

B.A., State University of New York at Binghamton
M.A., University of California, Los Angeles

Pence, Robert L. (1969)
Professor of Anthropology

A.A., El Camino College
B.A., California State University, Long Beach
M.A., University of California, Los Angeles

Penrod, Richard G. (1971)
Associate Professor of History

B.A., M.A., Brigham Young University

Perry, Gerald E. (1964)
Professor of Physical Education
Department Co-Chairperson, Physical Education-Men

B.S., University of California, Los Angeles

Peterson, Lynne K. (1976)
Professor of Psychology

B.A., M.A., California State University, Northridge
Ph.D., California Graduate Institute

Phifer, Elaine E. (1989)
Professor of Nursing

B.S.N., Case Western Reserve University
M.N., University of California, Los Angeles

Phoenix, David D. (1986)
Associate Professor of Special Education

B.A., M.A., Ed.S., University of Nevada, Reno

Piazza, Stephen Paul (1978)
Professor of Music
Department Chairperson, Music

B.M., M.M., University of Southern California

Pickard, Dean (1985)
Professor of Philosophy/Humanities

B.A., University of California, Riverside
M.A., California State University, Long Beach
Ph.D., Claremont Graduate School

Pinkston, Howell (1970)
Professor of Art

B.S., M.A., Wayne State University

Ponsor, Judith (1980)
Professor of Nursing
ASO Advisor

R.N. Queen of Angels School of Nursing, Los Angeles
B.S. California State University, Los Angeles
M.N., University of California, Los Angeles

Powell, Mark L. (1967)
Professor of Geography
Department Chairperson, Earth Science/Physics

A.A., Los Angeles City College
B.A., M.A., California State University, Northridge

Pregerson, Bernardine S. (1976)
Professor of Microbiology

B.A., University of California, Berkeley
M.S., California State University, Northridge

Putnam, Gene E. (1989)
Associate Professor of Theater Arts
Department Co-Chairperson, Theater

B.A., California State University, Fullerton
M.E.D., Whittier College
M.F.A., California State University, Fullerton

Putnam, Thomas C. (1992)
Assistant Professor of Mathematics

B.S., M.A., Ph.D., University of California, Santa Barbara

Raigoza, Margarita L. (1984)
Professor of Counseling

B.A., University of California, Los Angeles
M.A., California State University, Northridge

Ramirez, Lucia (1984)
Professor of Counseling

A.A., Los Angeles City College
B.A., M.S., California State University, Los Angeles

Reiter, Kathleen L. (1975)
Director, Campus Child Development Center

B.A., M.A., California State University, Northridge

Rikel, James E. (1977)
Professor of Life Science

A.B., Whittier College, Whittier
Ph.D., University of Southern California

Rinnander, Elizabeth A. (1981)
Acting Associate Dean, Academic Affairs

B.A., M.Ed., University of Massachusetts, Amherst
Ed.D., University of California, Los Angeles

Robin, Florence K. (1975)
Professor of Library Science
Department Chairperson, Library

B.A., University of California, Los Angeles
M.L.S., University of Southern California

Rooney, Colleen (1975)
Professor of Counseling

A.B., University of San Francisco
M.A., California State University, Northridge

Rosdahl, Thomas (1986)
Associate Professor of Industrial Technology

A.A., Los Angeles Pierce College
B.A., California State University, Los Angeles

Ross, Bernice L. (1986)
Professor of Psychology

B.A., M.A., University of California, Los Angeles
Ph.D., University of Southern California

Roth, Sheldon (1989)
Associate Professor of Counseling

B.A., M.S., California State University, Los Angeles

Rowe, Bruce M. (1971)
Professor of Anthropology

B.A., M.A., University of California, Los Angeles

Russell, William H. (1984)
Professor of Geography

B.A., M.A., California State University, Northridge

Santillanes, Vinona (1974)
Associate Professor of Special Education

B.S., Gallaudet College
M.A., California State University, Northridge

Schleppenbach, Peter M. (1985)
Professor of Computer Science and Information Technology

B.A., University of California, Los Angeles
M.Ed., University of La Verne

Schneider, John (1980)
Professor of Music

B.A., University of California, Santa Barbara
M.A., Ph.D., University of Wales, Cardiff, England
A.R.C.M., Royal College of Music, London

Schneider, Sandra (1991)
Assistant Professor of English

B.A., University of California, Irvine
M.A., Claremont Graduate School

Schutzer, David L. (1985)
Professor of Anthropology

A.A., Los Angeles Pierce College
B.A., California State University, Northridge
M.A., University of California, Los Angeles

Sears, Malcolm G. (1977)
Professor of Natural Resources Management

B.S., Humboldt State College

Seigel, David (1976)
Professor of Business

L.L.B., Cleveland Marshall Law School
Juris Doctor, Cleveland State University

Shapiro, Leland S. (1976)
Professor of Animal Science

B.S., M.S., California Polytechnic State University, San Luis Obispo
Ph.D., Oregon State University
Licensed Pasteurizer, State of California
Registered Small Animal Dietitian

Sharma, Brahama D. (1976)
Professor of Chemistry

B.Sc. (Hons); M.Sc., University of Delhi
Ph.D., University of Southern California

Sharpe, Kenneth J. (1984)
Professor of Electronics
Department Chairperson, Electronics

B.S., California State Polytechnic University, Pomona
M.A., California State University, Los Angeles

Shaver, James R. (1987)
Professor of Sociology

A.B., Humboldt State University
M.S., Illinois Institute of Technology

Shaw, William L. (1958)
Professor of Electronics

Class A Vocational Credential
University of California, Los Angeles

Sheff, Eileen T. (1979)
Professor of Counseling

B.S., Ohio State University
M.S., California State University, Long Beach

Sheldon, Charles C. (1988)
Assistant Professor of English

B.A., University of California, Santa Barbara
M.Litt., University of Edinburgh, Scotland

Shepherd, Henny B. (1970)
Associate Professor of Physical Education

B.A., California State University, Northridge
M.S., California State Polytechnic University, Pomona

Sherman, Arthur A. (1984)
Professor of Computer Science and Information Technology
Department Chairperson, Computer Science
Academic Senate, Second Vice President

B.A., University of California, Los Angeles

Siever, Patricia G. (1989)
Professor of History

B.A., University of California, Los Angeles
M.A., University of California, Los Angeles
A.B.S., University of California, Los Angeles

Sirakides, Leo N. (1973)
Professor of Business

B.S., M.A., New York University

Siskin, Burton F. (1986)
Professor of Anthropology

B.S., University of California, Los Angeles
B.A., California State University, Northridge
M.A., University of California, Los Angeles

Skidmore, Richard D. (1975)
Professor of Business

B.S., M.S., California Polytechnic State University, San Luis Obispo

Small, Laurence (1974)
Professor of Mathematics

B.A., University of California, Los Angeles
M.S., California State University, Northridge

Smetzer, Ronald D. (1981)
Professor of Industrial Technology
Academic Senate, President

A.A., A.S., Los Angeles Pierce College
B.A., University of State of New York
CMfgE (Certified Manufacturing Engineer), Society of Manufacturing Engineers

Smith, Richard A. (1986)
Professor of Psychology

B.A., Loyola University
M.A., California State University, Los Angeles

Smith, Walter Henry (1956)
Professor of Art

B.F.A., M.F.A., University of Southern California

Snider, Kathleen E. (1989)
Associate Professor of Nursing

R.N., Saint Vincent's College of Nursing
B.S., Mount Saint Mary's College
M.S., California State University, Los Angeles

Snooks, A. Nancy (1971)
Professor of Art

B.A., Immaculate Heart College
M.A., California State University, Los Angeles
M.F.A., University of Southern California

Soccoccio, Joseph M. (1977)
Professor of Photography
Department Chairperson, Media Arts

A.A., Los Angeles Valley College
B.F.A., Art Center College of Design

Solomon, Marcia N. (1976)
Professor of Nursing

B.S.N., Fairleigh-Dickinson University
M.Ed., Johns Hopkins University
Diploma, Sinai School of Nursing, Baltimore

South, Richard W. (1976)
Professor of Horticulture
Department Chairperson, Agriculture and Natural Resources

B.S., Southern Illinois University
M.S., California Polytechnic State University, San Luis Obispo

Sparks, Donald M. (1989)
Associate Professor of Physics

B.S., Humboldt State University
M.S., M.A., California State University, Northridge

Stanley, Kenneth (1966)
Assistant Professor of Physical Education

B.S., University of Southern California

Stein, Philip L. (1965)
Professor of Anthropology
Dean, Academic Affairs

B.A., M.A., University of California, Los Angeles

Sutton, Daryl Lynn (1979)
Professor of Nursing

B.S., University of California, Los Angeles
M.S., University of California, San Francisco

Taylor, Rowan S. (1964)
Professor of Music

A.B., M.A., Brigham Young University

Thomas, Louise B. (1975)
Professor of Nursing

B.S., Washington State College
M.S., University of Colorado

Thomsen, Mary Joan M. (1964)
Professor of Psychology

B.A., M.A., University of California, Los Angeles

Thomsen, Terry (1966)
Professor of Business Administration

B.S., Bradley University
M.B.A., University of California, Los Angeles

Thouin, Laurence G. Jr. (1982)
Professor of Biology

B.A., Occidental College
M.S., Ph.D., University of Southern California

Tishler, Roger (1984)
Professor of Mathematics

B.A., Boston University
M.S., Tulane University

Tontsch, John W. (1965)
Professor of Computer Technology and Information Technology

B.S.E.E., Northwestern University

Trinchero, Bart L. (1968)
Professor of Industrial Technology
Department Chairperson, Industrial Technology

B.A., M.A., California State University, Los Angeles

Turney, Kay E. (1965)
Professor of Physical Education
Department Chairperson, Physical Education – Women

B.A., California State University, Los Angeles
M.A., University of California, Los Angeles

van Tamelen-Hall, Victoria (1991)
Counselor
Consulting Assistant Professor, GAIN

B.A., California State University, Northridge
M.Ed., Colorado State University

Waldron, Jill R. (1971)
Professor of English

B.A., Illinois Wesleyan University
M.A., University of Illinois

Warren, James A. II (1970)
Professor of Music

B.A., University of California, Los Angeles
M.M., University of Southern California

Wechsler, Ronald (1978)
Professor of Animal Science

A.S., Los Angeles Pierce College
Class A Vocational Credential, University of California, Los Angeles

Weiser, Marian S. (1963)
Professor of Physical Education

B.S., University of Wyoming
M.A., Mills College

Weiss, Bernd (1985)
Professor of Psychology

A.A. City College of San Francisco
B.S., University of California, Berkeley
M.S., California State University, San Francisco
M.A., University of California, Los Angeles
Ph.D., University of California, Los Angeles
Dr. Humanities (Hon.), Ken Studies Institute
Certificate Post Doctoral Scholar, University of California, Los Angeles

Wells, Raymond A. (1985)
Professor of Biology

B.A., M.S., California State University, Northridge
Ph.D., University of Southern California

Whalen, Paul L. (1985)
Dean, Academic Affairs

A.A., East Los Angeles College
B.A., California State University, Los Angeles
B.S., M.S., North Texas State University

White, Elizabeth G. (1982)
Associate Professor, Animal Health Technology

A.S., Los Angeles Pierce College
A.H.T., State of California

Williams, Charles R. (1974)
Assistant Professor of Physical Education

B.A., University of California, Santa Barbara

Williams, Sheila M. (1990)
Associate Professor of History

B.A., M.A., California State University, Northridge

Wittman, Darlene K. (1979)
Professor of America Sign Language/Interpreter Education

B.A., M.A., California State University, Northridge

Woods, Dorris S. (1989)
Associate Professor of Nursing

B.S.N., Indiana University
M.N., University of California, Los Angeles
M.S., California State University, Los Angeles
Ph.D., Claremont Graduate School

Yamada, Katsuya (1989)
Associate Professor of Physics

B.S., Tokyo Denki Daigaku, Tokyo
M.S., Ph.D., University of Tennessee

Yoder, Kathie A. (1988)
Associate Professor of Mathematics

B.A., Mount St. Mary's College
M.A., University of California, Santa Barbara
M.S., California State University, Northridge

Yoshiwara, Bruce W. (1989)
Associate Professor of Mathematics
Department Chairperson, Mathematics

B.A., M.A., Ph.D., University of California, Los Angeles

Yoshiwara, Katherine (1980)
Professor of Mathematics

B.S., Michigan State University
M.A., University of California, Los Angeles

Zappala, Robert R. (1976)
Professor of Astronomy

B.S., Case Institute of Technology
M.S., University of Chicago
Ph.D., University of California, Santa Cruz

Zitzelberger, John F. (1987)
Associate Professor of Electronics

A.S., Don Bosco Technical Institute
B.S., California State Polytechnic University, Pomona
M.S., California State University, Los Angeles

EMERITI

Adams, Andrew A. 1967-1991; Professor of Psychology

Adelson, Ben H. 1965-1981; Professor of Journalism

Alberti, Leo; 1956-1980; Professor of Chemistry

Alvarez, E.C.; 1955-1983; Professor of Computer Science

Anderson, Arthur J.; 1955-1980; Professor of Business Administration

Anderson, Ellen S.; 1965-1993; Professor of Business

Andrino, Ruben D.; 1966-1993; Professor of Modern Languages

Angier, Edwin; 1947-1955; President of the College

Ater, Leroy Earl, Jr.; 1966-1989; Professor of English

Atkins, Earl; 1967-1985; Professor of Industrial Arts

Bardeen, Jean Elizabeth; 1951-1975; Professor of Physical Education; Department Chairperson, Physical Education – Women

Barlow, John D., 1949-1984; Professor of Animal Science

Baugh, Frank A., 1961-1988; Professor of Animal Science; Assistant Dean, Academic Affairs

Baumgartner, Walter; 1966-1978; Financial Aids Coordinator

Bayer, Diana E., 1967-1984; Professor of Special Reading/English

Becker, Victor M.; 1959-1978; Professor of Speech/Theater Arts; Department Chairperson, Speech – Theater Arts

Billings, Leona R.; 1971-1982; Associate Professor of Philosophy – Sociology

Bishop, Raymond Thomas; 1957-1962; Professor of Physical Education

Boggess, W. Lindsay; 1947-1982; Professor of Animal Science

Boyd, Barbara J., 1966-1973; Assistant Professor of Physical Education

Boyd, John A.; 1966-1992; Associate Professor of Physical Education

Bravo, Edward; 1970-1991; Professor of Physical Education

Briggs, Margaret; 1970-1981; Lecturer in Chemistry

Bruce, Robert Nigel; 1961-1983; Professor of English

Buquoi, Tyrus W.; 1966-1980; Professor of Mathematics

Carico, Charles C.; 1963-1983; Professor of Mathematics

Carrillo, A. Alexander; 1968-1989; Professor of Art

Caruana, Teresa A.; 1974-1990; Professor of Business

Cavenaugh, Jane T.; 1970-1982; Professor of Psychology

Chambers, Ada E.; 1957-1974; Professor of Philosophy

Chambers, James V.; 1968-1983; Professor of English

Chambers, Robert D.; 1957-1989; Professor of Physical Education

Chapman, Norman C.; 1957-1968; 1977-1982; Professor of Music; Dean of Instruction

Charland, Gustave M.; 1958-1972; Professor of Foreign Languages

Chase, Robert; 1971-1985; Dean of Academic Affairs

Chookolingo, Frank C.; 1959-1984; Professor of Political Science

Clark, John Paul; 1955-1978; Lecturer in Music

Clark, Marjory Q.; 1967-1983; Professor of Business

Cluff, John M.; 1966-1989; Professor of Political Science

Cobb, Charles M.; 1970-1983; Professor of English

Corbeil, John W.; 1965-1992; Professor of Art

Craig, Wesley V.; 1964-1976; Associate Professor of Art

Crandall, James W.; 1965-1991; Professor of Art

de Champlon, John S.; 1965-1984; Professor of Foreign Languages

de Kramer, John W.; 1973-1983; Associate Professor of Art

De Leon, Ralph; 1961-1986; Professor of Physical Education

Delling, Leonard V.; 1974-1994; Professor of Electronics

Dembicer, Elaine Lepeirs; 1969-1990; Professor of History

Dengler, Ben 1968-1993; Professor of Architecture

Deonik, Walter A.; 1957-1988; Associate Professor of Engineering

DesMarteau, Philip D.; 1976-92; Professor of Animal Science

Deutsch, Joseph; 1957-1980; Professor of Business

Dewey, John S.; 1966-1985; Professor of Geography

Dixon, James; 1949-1982; Professor of Horticulture; Cordinator of Administrative Services

Dow, Eugene; 1957-1982; Professor of Theater Arts

Drooyan, Irving; 1956-1983; Professor of Mathematics

Duffy, Charles M.; 1968-1978; Professor of Industrial Education

Enkema, Patricia; 1967-1987; Professor of Biology

Enzer, Shirley A.; 1976-1986; Lecturer in Physical Education

Farhood, John N.; 1986-1991; Dean of Academic Affairs

Farrar, Ronald D.; 1968-1989; Professor of Foreign Languages; Department Chairperson, Foreign Languages

Feldman, Bernard; 1967-1983; Professor of Mathematics

Fiorello, Geraldine Y.; 1961-1990; Professor of Physical Education

Flack, Frank M.; 1955-1989; Professor of English

Fleming, Frank Jacob; 1957-1975; Professor of Mathematics

Folsom, Hannah B.; 1965-1972; Associate Professor of English

Foster, Harold; 1963-1984; Professor of Psychology

Furman, Mildred; 1971-1986; Professor of Health Education

Gasper, Louis; 1963-1976; Professor of Sociology; Department Chairperson, Philosophy – Sociology

Gazurian, Garo; 1971-1983; Professor of Art

Gearing, Richard A.; 1970-1987; Counselor

Gechtman, Murray; 1956-1989; Lecturer in Mathematics; Department Chairperson, Mathematics

Gengerelli, Carmen N.; 1964-1978; Associate Professor of Foreign Languages

Gibson, Don W.; 1958-1972; Associate Professor of Animal Science

Goldman, Harold L.; 1964-1987; Professor of Business Administration

Goodman, Florence J.; 1958-1978; Professor of English

Goodman, Janice; 1958-1988; Professor of Business; Assistant Dean, Academic Affairs

Green, Gladys; 1964-1980; Professor of English

Guffey, Mary Ellen; 1975-1994; Professor of Office Administration

Hadel, Walter H.; 1958-1976; Assistant Dean of Admissions and Records

Hadley, Lindy Lou; 1964-1989; Professor of Physical Education

Haffke, Elinor D.; 1975-1993; Associate Professor of Nursing; Professor of Counseling

Haight, Fletcher M.; 1957-1980; Lecturer in Cooperative Education

Haines, A. Lee; 1948-1974; Professor of Botany

Halby, William A.; 1966-1987; Professor of Industrial Education; Director, Cooperative Education

Hall, Fay K.; 1986-1989; Professor of Nursing

Harris, Sigmund P.; 1966-1986; Professor of Physics

Hawkins, Jane; 1968-1988; Lecturer in Theater Arts

Hayworth, Edward 1963-1993; Professor of Business Administration

Hess, Jack D.; 1956-1985; Professor of Foreign Languages; Department Chairperson, Foreign Languages

Hinkston, Eugene R.; 1956-1982; Professor of Political Science

Hoffman, Louis E.; 1947-1964; Dean of Instruction

Holiday, Jay E.; 1956-1964; Assistant Professor of Psychology; Department Chairman, Behavioral Science

Holloway, Mildred B.; 1969-1979; Professor of Nursing; Department Chairperson, Nursing

Hopkins, Robert C.; 1971-1982; Professor of Computer Science

Hopper, Barbara K.; 1968-1982; Professor of Biology

Hornung, Betsy; 1984-1985; Associate Professor of Psychology

Horst, Donald P.; 1970-1988; Professor of Theater

Horton, Gwendolyn; 1973-1983; Professor of Nursing

Hotop, Max; 1963-1989; Assistant Professor of Physics; Counselor

Houghten, Sadako H.; 1966-1986; Professor of Biology

Huber, William A.; 1965-1989; Professor of Chemistry; Department Co-Chairperson, Chemistry

Hubbell, John L., 1965-1984; Professor of Foreign Languages

Hund, Edgar; 1972-1988; Professor of Electronics

Hylton, Wallace; 1985-1989; Professor of Art

Jampol, Sylvia; 1968-1982; Professor of Physiology

Johnson, Ray; 1964-1973; Dean of Instruction

Jones, Collins E.; 1950-1976; Professor of Physical Education

Jones, Harry; 1963-1994; Professor of Electronics

Kamuk, John; 1985-1989; Lecturer of Industrial Education

Karlin, Sol Allen; 1961-1983; Professor of Biology; Department Chairperson, Life Science

Karpel, Eli; 1958-1981; Professor of Art

Keehn, Samuel; 1966-1986; Professor of Foreign Languages; Department Chairperson, Foreign Languages

Kelliher, Maurice B.; 1956-1981; Professor of Business Administration; Counselor

Kernberger, Phyllis H.; 1952-1973; Professor of English

Kersey, Vierling, Jr.; 1947-1971; Dean of Educational Services

Kharitonoff, Alexander G.; 1965-1986; Professor of History

Khasigian, Amos; 1965-1983; Professor of Economics

Kiner, Nolan W.; 1950-1976; Professor of Horticulture

Kleeb, Jane; 1963-1986; Professor of English

Knapp, Kenneth; 1969-1986; Professor of Vocational Education

Kohler, Max J.; 1948-1958; 1971-1982; Lecturer in Agriculture

Kostanick, Celeste B.; 1957-1983; Professor of Geography

Kuljian, Ernest S., 1951-1984; Professor of Chemistry

Lambert, Kathryn 1966-1993; Professor of Business Administration

Landau, William; 1966-1989; Professor of English

Lebow, Ruth; 1968-1984; Professor of Oceanography

Lees, Richard F.; 1965-1989; Professor of Psychology

Lewis, William E.; 1981-1984; Dean, Student Services; Associate Professor of Business Administration

Lord, Marjorie B.; 1951-1970; Dean of Students

Loucks, Jean; 1971-1990; Vice President, Academic Affairs

Lynch, Neil; 1947-1970; Counselor

Mass, Evan; 1951-1975; Dean of Student Personnel

Madden, William R.; 1959-1983; Professor of Library Services

Majer, Lincoln; 1972-1975; Lecturer in Vocational Education

Marrelli, Richard S.; 1975-1984; Professor of Industrial Education

Martin, Marie; 1966-1970; President of the College

Marton, Arnold; 1966-1983; Professor of Speech

Mason, Joyce; 1967-1990; Professor of Business

Matchett, Bruce; 1962-1983; Professor of Speech & Theater Arts

McCarty, Marcella A.; 1961-1981; Professor of Health Services

McClatchey, William D.; 1986-1989; Professor of Anthropology

McCrackin, Russell; 1963-1983; Professor of Physics

McCurdy, Richard M.; 1966-1985; Professor of Chemistry

Mead, Earl; 1966-1987; Professor of Sociology; Department Chairperson, Philosophy – Sociology

Means, Daniel G.; 1989-1991; Professor of Educational Guidance; President of the College

Miller, Guy Snowden; 1968-1983; Professor of Political Science

Moore, Anna; 1957-1989; Lecturer in Physical Education

Morosi, J. William; 1964-1980; Dean of Administrative Services

Morzer, Chester P.; 1962-1983; Professor of Vocational Education

Muir, John K.; 1964-1989; Lecturer in Physical Education

Nardin, Barbara; 1976-1988; Associate Professor of Geology

Nicklin, John R.; 1970-1973; Acting President of the College

Niles, Charles; 1964-1974; Associate Professor of History

Norman, Guinevere Guy; 1965-1986; Professor of Sociology

O'Connor, Robert; 1965-1994; Professor of Health Education

Odegard, Patricia; 1979-1989; Professor of Nursing

Oliver, Lois C.; 1964-1978; Professor of Business; Evening Department Chairperson, Office Administration

Ott, Walter H.; 1947-1969; Professor of Industrial Arts; Department Chairperson, Technical – Industrial

Pacl, Rudolph S.; 1957-1976; Associate Professor of Chemistry

Paullada, Stephen; 1950-1975; Professor of Foreign Languages

Paulman, Jack S.; 1967-1977; Professor of Computer Science

Pendleton, James; 1970-1989; Professor of Physical Education

Peterson, Philip E.; 1975-1994; Professor of Mathematics

Pill, Beatrice L.; 1955-1982; Professor of Chemistry

Popkin, Himan A.; 1970-1982; Professor of Industrial Education

Proffer, Estes E.; 1968-1982; Professor of Business Administration

Raboy, Joseph; 1968-1989; Professor of English

Raskin, Jerome E.; 1953-1988; Professor of Physics

Ravetch, Herbert; 1958-1970; 1978-1985; President of the College; Associate Professor of English

Raymund, Joan M.; 1970-1986; Lecturer in English

Reid, Marion; 1978-1986; Associate Professor of Industrial Education

Reidy, James B. Jr.; 1976-1989; Professor of Computer Science; Department Chairperson, Computer Science and Information Technology

Renzi, Joseph; 1971-1983; Professor of Vocational Education

Richards, James R.; 1986-1991; Professor of Psychology

Richards, Malcom G.; 1964-1980; Professor of Vocational Education

Rogers, Ruby R.; 1970-1980; Associate Professor of Nursing

Rosemark, Erika; 1974-1989; Assistant Professor of Early Childhood Education; Director, Campus Children's Center

Rosen, William J.; 1976-1988; Assistant Professor of Mathematics

Rosenberg, Isadore; 1965-1990; Professor of Special Reading/Psychology

Rosenthal, Marilyn L.; 1987-1989; Professor of Nursing

Rosenzweig, Aaron B.; 1961-1980; Professor of Music

Ross, D. Lee; 1971-1986; Dean, Academic Affairs

Rothe, Morris; 1957-1978; Professor of Mathematics

Roye, Joseph G.; 1957-1985; Professor of Psychology

Russell, Howard J.; 1962-1985; Professor of Speech

Sanden, Bernyl J.; 1951-1983; Professor of Animal Science

Scheibel, Barbara G.; 1976-1989; Professor of Special Reading/English

Scheibel, Robert W.; 1969-1989; Professor of Journalism

Schneider, David, 1970-1984; Professor of Sociology

Schneiderman, Beth; 1971-1991; Professor of English

Schruben, Francis W.; 1958-1989; Professor of History

Schulman, Benson R.; 1966-1989; Professor of English

Schulman, Florence W.; 1968-1987; Professor of Health, Physical Education, Leisure Management

Schulman, Sandra; 1972-1989; Director, Study Skills Center; Professor of Special Reading/English

Sheldon, M. Stephen; 1975-1983; Coordinator, Institutional Research

Shocket, Sol; 1959-1992; Professor of Economics

Siemens, David F., Jr.; 1966-1986; Professor of Philosophy

Silver, Constance R.; 1969-1988; Counselor

Silverstein, Paul; 1962-1991; Professor of Psychology

Skovron, Alfred; 1977-1994; Professor of Modern Languages

Slattery, Eugene R. 1950-1993; Professor of Mathematics

Smiljkovich, Ortrud; 1965-1977; Assistant Professor of Foreign Languages

Smith, Donald A. 1982-1992; Professor of Business Administration

Smith, Thomas; 1964-1987; Professor of Library Services

Streebing, Agnes; 1962-1986; Professor of Business

Sutherland, Miriam M.; 1976-1989; Professor of Nursing

Thompson, William L.; 1962-1991; Professor of History

Topik, Fred S.; 1959-1977; Professor of Foreign Languages

Toyoshima, Joe; 1964-1989; Lecturer in History

Treadwell, Terence J.; 1986-1992; Associate Professor of Psychology

Tullar, Richard; 1947-1975;Professor of Zoology

Van Auker, Alfred J.; 1961-1986; Professor of Art

Van Vlaenderen, Bernard; 1976-1994; Professor of Mathematics

Van Noy, A. Henry 1964-1993; Professor of Business Administration

Van Voorhis, James C.; 1964-1989; Professor of Architecture

Vernon, James Y.; 1971-1986; Professor of Meteorology

Vree-Brown, Marion F.; 1958-1985; Professor of Music

Walker, John Michael; 1973-1989; Lecturer of Horticulture

Ward, Benjamin B.; 1947-1972; Professor of Horticulture

Whitman, Orene; 1972-1989; Professor of Nursing

Wilcox, Robert G.; 1965-1983; Professor of Sociology

Wilkinson, Jean; 1964-1984; Associate Professor of English

Williams, Robert L.; 1969-1980; Associate Professor of History

Wilson, Charles C., 1961-1984; Professor of Journalism

Wilson, Gussie Edwards; 1964-1975; Professor of Business

Wooton, William; 1958-1972; Associate Professor of Mathematics

Wynns, John; 1957-1978; Professor of Philosophy

Xanthos, Paul J.; 1965-1989; Professor of Physical Education

Zeitlin, Herbert; 1980-1989; Counselor; Professor of Education

GLOSSARY OF TERMS

Academic Probation – After attempting 12 units, a student whose cumulative grade point average (beginning Fall 1981) falls below 2.00 is placed on academic probation. A student whose cumulative grade point average falls below 2.00 for three consecutive semesters is subject to dismissal from the College.

Academic Renewal – Removal of substandard grades from a student's academic record for purposes of computing the grade point average; special conditions must be met.

Add Permit – A card issued by an instructor upon presentation of a valid Registration/Fee Receipt which permits the student to add the class if the instructor determines that there is room. Enrollment in the class is official only if the Add Permit is processed by Admissions & Records before the published deadline.

Admissions and Records – The office and staff that admits a student and certifies his record of college work; also provides legal statistical data for the College.

Administration – Officials of the College who direct and supervise the activities of the institution.

Application for Admission – A form provided by the College on which the student enters identifying data and requests admittance to a specific semester or session. A student may not register and enroll in classes until the application has been accepted and a Permit to Register issued.

Assessment Tests – Tests given prior to admission which are used to determine the student's assignment to the most appropriate class level.

A.S.O. – Organization to which all enrolled students are eligible to join called the Associated Student Organization.

Associate Degree (A.A. or A.S.) – A degree (Associate in Arts or Associate in Science) granted by a community college which recognizes a student's satisfactory completion of an organized program of study consisting of 60 to 64 semester units.

Bachelor's Degree (B.A., A.B., B.S.) – A degree granted by a four-year college or university which recognizes a student's satisfactory completion of an organized program of study consisting of 120 to 130 semester units.

Certification of Completion – A certificate granted by a community college upon satisfactory completion of a formal program of vocational student of 16 to 45 units.

Community College – A two-year college offering a wide range of programs of study, many determined by local community need.

Concurrent Enrollment – Enrollment in two or more classes during the same semester.

Continuing Student – A student registering for classes who attended the College during the previous semester. A student registering for the fall semester is a continuing student if he or she attended the College during the previous spring semester; attendance during the summer session is not included in this determination.

Corequisite – A requirement that must be satisfied at the same time a particular course is taken; usually a corequisite is concurrent enrollment in another course.

Counseling – Guidance provided by professional counselors in collegiate, vocational, social, and personal matters.

Course – A particular portion of a subject selected for study. A Course is identified by a Subject Title and Course Number; for example: Accounting 1.

Course Title – A phrase descriptive of the course content, for example the course title of Accounting 1 is "Introductory Accounting I."

Credit by Examination – Course or unit credit granted for demonstrated proficiency through testing.

Credit/No Credit – A form of grading whereby a student receives a grade of CR or NCR instead of an A, B, C, D, or F. A CR is assigned for class work equivalent to a grade of C or above.

Dismissal – A student on academic or progress probation for three consecutive semesters may be dismissed from the College. Once dismissed the student may not attend any college within the Los Angeles Community College District for a period of one year and must petition for readmittance at the end of that period of time.

Educational Program – A planned sequence of credit courses leading to a defined educational objective such as a Certificate of Completion or Associate Degree.

Electives – Courses which a student may choose without the restriction of a particular major program-curriculum.

Enrollment – That part of the registration process during which students select classes by ticket number to reserve a seat in a selected class and be placed on the class roster. A student may also enroll in a class by processing an Add Permit obtained from the instructor of the class.

Full-time Student – A student may be verified as a full-time student if he/she is enrolled and active in 12 or more units, during the Fall or Spring semester.

General Education Requirements – (also called Breadth Requirements). A group of courses selected from several disciplines which are required for graduation.

Grade Points – The numerical value of a college letter grade: A-4, B-3, C-2, D-1, F-0.

Grade Point Average – A measure of academic achievement used in decisions on probation, graduation, and transfer. The GPA is determined by dividing the total grade points earned by the number of attempted units.

Grade Points Earned – Grade points times the number of units for a class.

I – Incomplete. The administrative symbol "I" is recorded on the student's permanent record in situations in which the student has not been able to complete a course due to circumstances beyond the student's control. The student must complete the course within one year after the end of the semester or the "I" reverts to a letter grade determined by the instructor. Courses in which the student has received an Incomplete ("I") may not be repeated unless the "I" is removed and has been replaced by a letter grade. This does not apply to courses which are repeatable for additional credit.

IP – In Progress. An "IP" is recorded on the student's permanent record at the end of the first semester of a course which continues over parts or all of two semesters. The grade is recorded at the end of the semester in which the course ends.

Lower Division – Courses at the freshman and sophomore level of college.

Major – A planned series of courses and activities selected by a student for special emphasis which are designed to teach certain skills and knowledge.

Minor – The subject field of study which a student chooses for secondary emphasis.

Non-penalty Drop Period – The first four weeks of a regular semester during which a student's enrollment in a class is not recorded on the student's permanent record if the student drops by the deadline. This deadline will be different for short-term and summer session courses.

Parent Course – A course which may be offered in modules. Credit for all modules of a parent course is equivalent to credit for the parent course. Parent courses are all courses without letters in the course number field.

Permit to Register – A form listing an appointment day and time at which the student may register. The permit is issued to all new students upon acceptance to the College, and to all continuing students.

Prerequisite – A requirement that must be satisfied before enrolling in a particular course usually a previous course, a test score, or consent of the appropriate division.

Progress Probation – After enrolling in 12 units a student whose total units for which a W, NCR, or I has been assigned equals 50 percent or more of the units enrolled is placed on progress probation. A student whose cumulative number of units (beginning Fall 1981) for which a W, NCR, or I has been assigned equals 50 percent or more for three consecutive semesters is subject to dismissal from the College.

RD – Report Delayed. This temporary administrative symbol is recorded on the student's permanent record when a course grade has not been received from the instructor. It is changed to a letter grade when the grade report is received.

Registration – The process whereby a continuing student or a new or reentering student whose application has been accepted formally enters the College for a specific semester and receives an Registration/Fee Receipt. The student may enroll in open classes as part of the registration process.

Returning Student – A former Pierce student registering for classes who did not attend the College during the previous semester. A student registering for the fall semester is a returning student only if he or she did not attend the College during the spring semester; attendance during the summer session is not included in this determination. Returning students must file a new Admissions Application.

Schedule of Classes – A booklet used during registration giving the Subject Title, Course Number, Course Title, Units, Time, Instructor, and Location of all classes offered in a semester.

Section – A group of registered students meeting to study a particular course at a definite time. Each section has a section number listed in the Schedule of Classes before the scheduled time of class meeting.

Section Number – See "Section", above.

Semester – One-half of the academic year, usually 20 weeks.

Subject – A division into which knowledge customarily is assembled for study, such as Art, Mathematics, or Psychology.

Subject Deficiency – Lack of credit for a course or courses required for some particular objective, such as graduation or acceptance by another institution.

Transfer – Changing from one collegiate institution to another after having met the requirements for admission to the second institution.

Transferable Units – College units earned through satisfactory completion of courses which have been articulated with four-year institutions.

Transcript – An official list of all courses taken at a college or university showing the final grade received for each course.

Transfer Courses – Courses designed to match lower division courses of a four-year institution and for which credit may be transferred to that institution.

Units – The amount of college credit earned by satisfactory completion of a specific course taken for one semester. Each unit represents one hour per week of lecture or recitation, or a longer time in laboratory or other exercises not requiring outside preparation.

Units Attempted – Total number of units in the courses for which a student received a grade of A, B, C, D, or F.

Units Completed – Total number of units in the courses for which a student received a grade of A, B, C, D, or CR.

Units Enrolled – Total number of units in which the student is enrolled at the end of the non-penalty drop period, which is the total number of units for all courses appearing on the student's transcript.

W – An administrative symbol assigned to a student's permanent record for all classes which a student has dropped or has been excluded from by the instructor after the end of the non-penalty drop date but before the last day to drop.

Withdrawal – The action a student takes in dropping all classes during any one semester and discontinuing coursework at the College.

NOTES

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DEPARTMENTAL ORGANIZATION

Department & Subject	Chairperson(s)	Office
AGRICULTURE AND NATURAL RESOURCES	Richard South	HORT 4910
Floral Design & Management General Agriculture Horse Science Natural Resources Management Ornamental Horticulture Veterinary Sciences		
ART	John Kuczynski	ART 3303H
Architecture Construction Technology Fine Art Technical Illustration		
BUSINESS ADMINISTRATION	David Braun	BUS 3210E
Accounting Business Business Law Escrow Finance Management Marketing Real Estate Supervision		
CHEMISTRY	George Ogar & Izzy Goodman	CHEM 0804 CHEM 0804
COMPUTER SCIENCE & INFORMATION TECHNOLOGY	Art Sherman	CO SC 1505A
Computer Technology Programming For Business Programming For Computer Science		
COOPERATIVE EDUCATION	Phil Osborne	BUNG 0370
COUNSELING	Rudy Dompe	ADM 1000
Personal Development		
EARTH SCIENCE-PHYSICS/ENGINEERING	Mark Powell	LS 1703
Anthropology Astronomy Engineering, Electrical Engineering, General Environmental Science Geography Geology Linguistics Meteorology Oceanography Physical Science Physics		
ELECTRONICS	Ken Sharpe	BUNG 0312
Electronics Electronics Technology Engineering Technology		
ENGLISH	Charlotte Doctor	FO 2801
Developmental Communications English English As a Second Language		
HISTORY	Joan MacMaster	FO 2805
HUMANITIES	Joan MacMaster	FO 2805
INDUSTRIAL TECHNOLOGY	Bart Trinchero	IT 3600
Automotive Apprenticeship Automotive Service Technology Drafting, Mechanical Electrical Construction and Maintenance Engineering Technician		

Department & Subjects	(Chairperson(s)	Office
Industrial Technology Machine Shop Technology Numerical Control Programming and Operations Quality Control Non Destructive Evaluation Quality Control Management Technical Mathematics Welding Woodworking/Cabinetmaking		
LIBRARY	Florence Robin	LIBRARY
LIFE SCIENCES	Ann Houston	BUNG 0359
Anatomy Biology Botany Environmental Science Microbiology Natural History Oceanography (Marine Biology) Physiology		
MATHEMATICS	Bruce Yoshiwara	MATH 1409E
MEDIA ARTS	Joe Soccoccio	BUNG 0330
Cinema Journalism Photography Public Relations		
MODERN LANGUAGES	Scarlett Gani	FO 2704
American Sign Language French Italian Japanese Spanish		
MUSIC	Stephen Piazza	MUSIC 3416
NURSING	Sharon Hall	BUNG 0320
Emergency Medical Technician 1-A Continuing Educ. for Nurses (available through Community Services Program) Registered Nursing		
OFFICE ADMINISTRATION	Janet Horne	BUS 3213B
General Administrative Legal Office Procedures Professional Secretary		
PHILOSOPHY-SOCIOLOGY	Betty Harwick	BEH 1306F
Education Philosophy Religious Studies Sociology		
PHYSICAL EDUCATION-MEN, WOMEN	Henry Lewis & Gerald Perry(Men)	MG 5414A
Dance — Kay Turney (Women) WG 5614B Health Education (Women) Physical Education Recreation		
POLITICAL SCIENCE-ECONOMICS	Harold Goerss	FO 2401
Economics Law Political Science		
PSYCHOLOGY	Gale James	BEH 1306
Psychology Statistics		
SPEECH COMMUNICATION	Jeff Cooper	BUNG 0386
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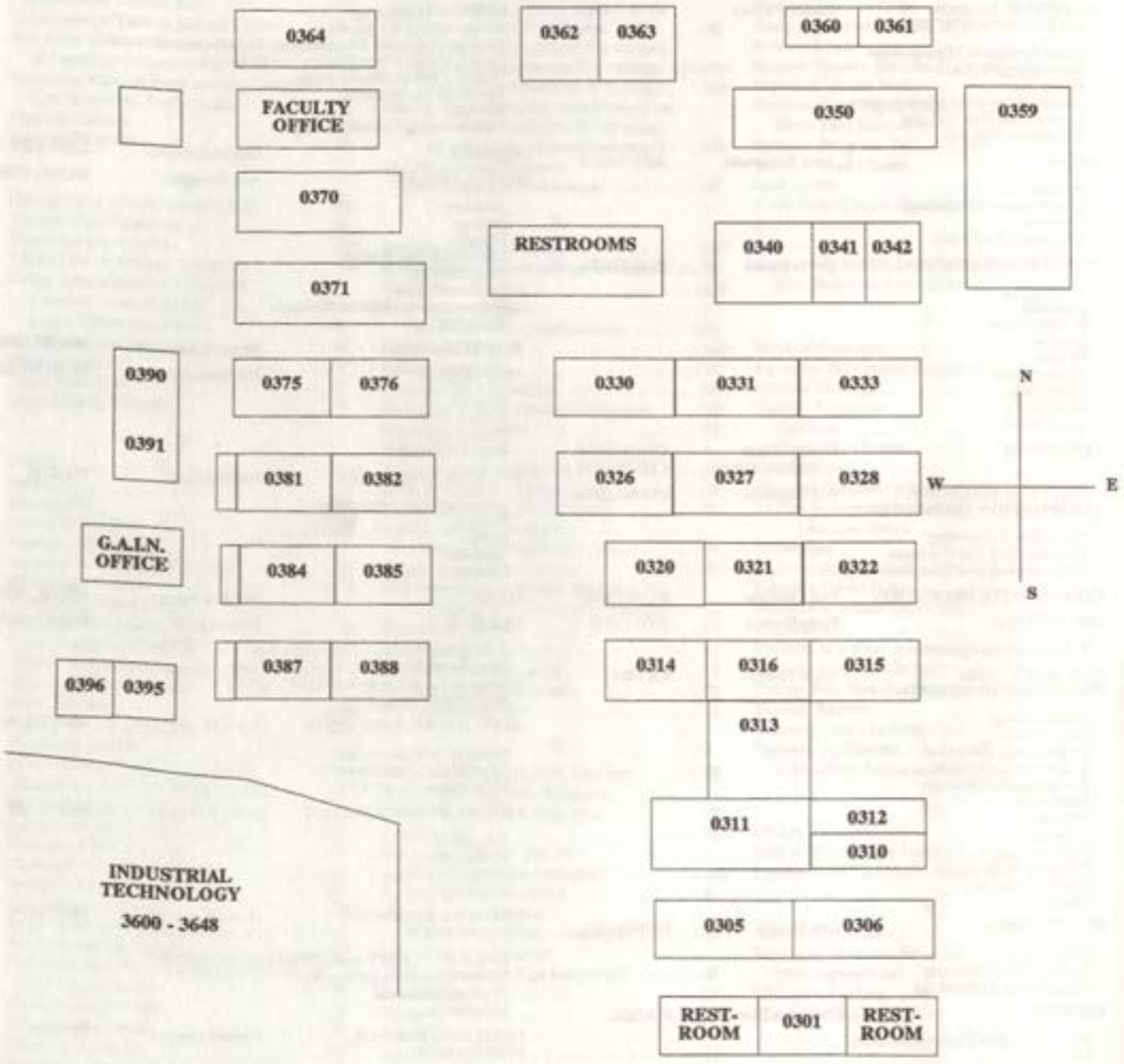
MAP OF THE BUNGALOWS



0301 Speech Squad Room
0312 Electronics Dept. Office
0320 Nursing Dept. Office
0327 Financial Aid Office/Veterans Office
0331 Media Arts/Photo Lab
0340 EOPS
0342 Job Placement/Housing Office
0360 Roundup Office
0370 Cooperative Education Office
0390 Community Services Classroom
0392 GAIN
0396 Nursing Lab

LOS ANGELES

PIERCE COLLEGE CAMPUS

ALPHABETICAL

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Bldg		Bldg	
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2	Physical Therapy	14	Mathematics
3	Bungalows	15	Computer Science
	Cooperative Education	16	Drafting
	Electronics	17	Life Science
	EOP & S	18	Learning Center
	Financial Aid		Library
	GAIN		Media Center
	Media Arts	19	Bookstore
	Nursing		Business Office
	Nursing Lab	21	Modern Language
	Photo Lab		Life Science Learning Ctr.
	Placement Housing	22-25	Faculty Offices
	Roundup	26	Community Services
	Speech	27	Faculty Office
	Veterans Office	28	Honors/PACE
4	WoMen's Resource Center	29-31	Faculty Offices
5	Cafeteria	32	Business Education
6	Assessment Center	33	Art
	Campus Center	34	Music
	Student Services	35	Performing Arts
7	A.S.O. Trailer	36	Industrial Technology
8	Chemistry	38	Metal Trades
9	Physics-Engineering	41	Agricultural Science
10	Academic Affairs	42	Agricultural Engineering
	Administration	46	Field House
	Admissions and Records	47	Field House Annex
	Career Center	49	Horticulture
	Counseling	50	Tennis Courts (lower)
	Special Services	52	Tennis Courts (upper)
11	Social Science	53	Campus Police
12	English	54	Mens Gym
13	Behavioral Science	56	Womens Gym

First two digits of room numbers signify building number. Example: room 1412 is located in building 14.