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The catalog of Authorized Subjects for Community Adult Schools, 1969-70 Revision, contains descriptions of courses which have been approved for scheduling, and lists applicable prerequisites, grade levels, the number of high school credits that may be earned, and community adult school graduate requirements and curricula. The community adult school curriculum is classified into nine areas of general education: Academic, Business, Civic, Elementary and Citizenship, Fine Arts and Crafts, Health, Homemaking, Industrial, and Music. Included also are the objectives of the catalog as well as of adult education. The former aims at providing a working manual with which to guide adults in planning educational goals and at maintaining through a yearly review the educational standard established by the Los Angeles City Board of Education. The latter aims at providing people in the community with educational opportunities for improvement of the individual and society through instruction and experience in areas such as: traditions and aspirations of the American way of life; history of man; cultures of man; goals of man; and communication between men. (nl)

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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ATALOG OF AUTHORIZED SUBJECTS

FOR COMMUNITY ADULT SCHOOLS
GRADUATION REQUIREMENTS AND CURRICULA

LOS ANGELES
CITY SCHOOLS
1969-70
REVISION

AC005044

**CATALOG OF
AUTHORIZED SUBJECTS
COMMUNITY ADULT SCHOOLS**

GRADUATION REQUIREMENTS AND CURRICULA

Los Angeles City Schools
Division of Instructional Planning and Services
Publication No. AC-100
1969-70 Revision

AC 005 044

This publication has been developed in accordance
with the *Comprehensive Curriculum Policy* adopted
by the Los Angeles City Board of Education.

APPROVED:

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FOREWORD

One of the important responsibilities of the Los Angeles City Schools is to provide a program of adult education. Its purpose is to offer adults learning opportunities that meet their basic educational needs. The program is conducted in 30 community adult schools and four skill centers. The community adult school curriculum is classified into nine areas of general education: Academic, Business, Civic, Elementary and Citizenship, Fine Arts and Crafts, Health, Homemaking, Industrial, and Music. ✓

During 1968-69, approximately 211,000 adults enrolled in the various courses. To achieve the comprehensive purpose, organized programs of community adult school instruction are provided in response to public demand, as expressed by organizations, by other groups, and by advisory committees. All offerings are geared to serve the educational needs of adults residing in the vast area encompassed by the Los Angeles City School District.

The Catalog of Authorized Subjects for Community Adult Schools, 1969-70 Revision, contains descriptions of those courses which have been approved for scheduling. Also listed are applicable prerequisites, grade levels, the number of high school credits that may be earned, and community adult school graduation requirements and curricula. The course number for each subject will assist principals in reporting to the Budget Division enrollment in classes and subjects.

During the school year, additional courses may be approved for inclusion in the adult education program on an experimental basis. These courses carry an "E" number. Once a year, the Board of Education officially adopts new courses and authorizes the deletions of those which are obsolete. These changes are to be made in subsequent catalogs of authorized subjects.

MILDRED NASLUND
Associate Superintendent
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and Services

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Appreciation is expressed to the staff members who assisted in preparing the 1969-70 Revision of the Catalog of Authorized Subjects for Community Adult Schools. The committee consisted of the following teachers, counselor, subject specialists, supervisors, vice principals, and principals.

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TABLE OF CONTENTS

FOREWORD	iii
ACKNOWLEDGMENTS	iv
OBJECTIVES	viii
GENERAL INFORMATION	ix
REQUIREMENTS OF ADULT EDUCATION PROGRAMS	xiii
High School Diploma Requirements in Four-Year Community Adult Schools	xiii
Eighth-Grade Diploma	xxi
Veterans' Service Acts	xxi
G.E.D. Testing Program for Non-Veterans	xxi
Certificate Programs	xxii
Programmed Instruction	xxvi
REQUIREMENTS TO QUALIFY FOR HIGHER EDUCATION	xxvii
Colleges and Universities	xxvii
California State Colleges	xxviii
Los Angeles Junior Colleges	xxix
SCHOOL CALENDAR FOR 1969-70	xxxii
LIST OF COMMUNITY ADULT SCHOOLS	xxxii
AUTHORIZED SUBJECTS	1
ACADEMIC EDUCATION 1 - 249	1
1 - 49 English	
50 - 89 Languages	
90 - 129 Mathematics	
130 - 184 Sciences	
185 - 229 Social Sciences	
230 - 249 Speech	
BUSINESS EDUCATION 300 - 699	17
300 - 319 Accounting	
329 - 339 Business Data Processing	
340 - 359 Business Machines	
360 - 374 Finance	
375 - 419 General Business	
420 - 439 Insurance	
440 - 454 Law	
455 - 509 Management and Supervision	
510 - 559 Merchandising	
560 - 589 Real Estate	
590 - 659 Secretarial Science	
660 - 699 Transportation and Traffic Management	

CIVIC EDUCATION 700 – 774	35
700 – 704 Civil Aeronautics	
705 – 709 Civil Defense	
710 – 719 Driver Education	
720 – 729 Fire Science	
730 – 734 Leadership Training	
735 – 759 Police Science	
760 – 769 Civic Education	
770 – 774 Gerontology	
ELEMENTARY AND CITIZENSHIP EDUCATION 775 – 799	40
775 – 784 Elementary Subjects	
785 – 789 Citizenship	
790 – 799 English As a Second Language	
FINE ARTS AND CRAFTS EDUCATION 800 – 834	43
800 – 804 Crafts	
805 – 834 Fine Arts	
HEALTH EDUCATION 835 – 884	46
835 – 839 First Aid	
840 – 849 Physical Education	
850 – 854 Swimming	
855 – 874 Nursing	
875 – 884 Health and Hygiene	
HOMEMAKING EDUCATION 885 – 999	49
885 – 904 Clothing Construction	
905 – 915 Consumer Education	
916 – 925 Foods	
926 – 929 Homemaking, General	
930 – 949 Home Furnishings	
950 – 954 Millinery	
955 – 999 Parent and Family Life Education	
INDUSTRIAL EDUCATION 1000 – 1599	56
APPRENTICESHIP EDUCATION 1000 – 1099	56
1000 – 1099 Apprenticeship Education	
TRADE AND TECHNICAL EDUCATION 1100 – 1499	67
1100 – 1124 Aero Space	
1125 – 1150 Automotive	
1151 – 1174 Building Construction	
1175 – 1249 Drafting and Design	
1250 – 1329 Electrical and Electronics	
1330 – 1364 Graphic Arts	
1365 – 1419 Metal	
1420 – 1459 Personal and Public Service	
1460 – 1474 Supervision	
1475 – 1484 Textile and Apparel	
1485 – 1499 Woodworking	

PRE-EMPLOYMENT TRADE AND TECHNICAL EDUCATION 1500 – 1599	95
1505 – 1508 Apparel	
1510 – 1514 Commercial Art	
1515 – 1529 Automotive	
1530 – 1539 Construction and Maintenance	
1545 – 1554 Food Service	
1555 – 1564 Drafting	
1570 – 1579 Electronics	
1580 – 1589 Metals	
1590 – 1599 Printing	
MUSIC EDUCATION 1600 – 1649	98
1600 – 1607 Instrumental	
1608 – 1612 Organ	
1613 – 1619 Piano	
1620 – 1629 Theory	
1630 – 1639 Vocal	
1640 – 1649 Music, General	
INDEX	101

OBJECTIVES

This adult education catalog is intended primarily for the use of counselors and community adult school administrators. It is a working manual with which to guide adults in planning educational goals; however, the publication also is much more. It is carefully reviewed each year to assure that curricular requirements for community adult school courses are consistent with the educational standards established by the Los Angeles City Board of Education. These standards are high, in keeping with the responsibilities placed upon our school system by the citizens who reside in the Los Angeles City School District. The catalog is one means of helping the many adults in our ever-expanding population to learn of opportunities to better themselves and to make worthy contributions to the society in which they live.

WILLIAM J. JOHNSTON
Assistant Superintendent
Division of Adult Education

GENERAL INFORMATION

OBJECTIVES OF ADULT EDUCATION

Public-supported adult education is designed to provide people in the community with educational opportunities for improvement of both the individual and society. The role of adult education in the Los Angeles City Schools is to develop the knowledge, skills, and attitudes of the individual necessary to meet the immediate and future demands of modern society. Essentially, these goals are derived from instruction and experience in the:

- Traditions and Aspirations of the American Way of Life
- History of Man
- Cultures of Man
- Institutions of Man
- Goals of Man
- Communication Between Men

Adult education has a great challenge and responsibility to serve the individual, the family, the community, and the nation. It provides one of the vital keys to our economic and cultural development by strengthening the nation's human resources. Intensive, continuing education is necessary to accelerate the development of our society and to assure that each individual fully achieves his potential.

ORGANIZATION AND PROGRAM

Under the general supervision of the Adult Education Division, 34 principals administer the program in given areas and serve as area directors of adult education. Each area includes a central school with branch locations, where day and evening classes are held. Supervisors and specialists are assigned to several subject areas. Approximately 2700 teachers staff the classrooms.

The objectives and content of the program are educationally sound and professionally guided. The program is conducted on a distinctly adult level. It includes effective counseling and guidance; scheduling of regular high school subjects leading to the high school diploma; an effective elementary education program; vocational courses; Americanization and citizenship classes; business education; homemaking education; gerontology; an active lecture and forum program; health and physical education; and music and fine arts.

SOURCES OF CREDIT

Five sources of credit may be applied toward a high school diploma in the Los Angeles community adult schools:

1. Credits earned in other secondary schools
2. Credits granted for basic training and courses completed during military service
3. Credits allowed through the testing program of the Los Angeles City Schools
4. Credits granted upon verification of work achievement having educational value
5. Credits earned in high school correspondence courses from the University of California or United States Armed Forces Institute

WORK ACHIEVEMENT CREDIT

Credit may be obtained on the basis of verified work achievement resulting in knowledge of skills comparable to those acquired in a secondary school class. In some cases, an achievement test may be required in addition to verification of achievement. The following are basic principles upon which such credit is granted:

1. Credit for work achievement may be granted toward graduation requirements for persons who have reached the age of 18.
2. Credit shall be granted on the basis of 10 semester periods per year or 5 semester periods for 6 months. No other division shall be made to account for odd months above 12. No credit shall be granted for work achievement in excess of 12 months if there is no change in the type of work performed. Exceptions may be made if the type of work is progressively more difficult, justifying a division into beginning and advanced courses.
3. A person must be employed for at least one year with the same firm, before his work achievement may be considered for credit; and he must spend at least 6 months at each type of work for which he requests credit.
For example, if a person were employed for 9 months by the same firm as a machinist and for 5 months as a draftsman, he would be eligible to apply for 5 semester periods of work achievement credit as machinist; but he would not be eligible to receive credit for his work as a draftsman.
4. Work achievement credit may not exceed 40 semester periods (journeyman level, or equivalent).
5. Credit may be granted for vocational experience only for which wages or salary were received. A person who is self-employed, and thereby earning a livelihood, shall be regarded as employed with pay.

An adult wishing to obtain work achievement credit should submit to the counselor letters signed by his employer on company stationery; verifying in detail the length of his employment and the number of months spent at each type of work for which he is seeking credit; and providing descriptions of duties for each job held.

The counselor will assist in preparing the necessary forms and will submit them through the principal to a central evaluation committee for final approval.

COUNSELING

Community adult schools maintain a staff of trained counselors who give educational and vocational guidance to students. Candidates for an elementary or high school diploma should consult the counselor for an evaluation of credits completed, and should seek advice on a course of study required for completion of diploma requirements. Counselors are always available before school opens; it is wise to see them in advance of the opening of a new term.

The community adult schools request the aid of day counselors and administrators to maintain contact with students who consider changing plans before graduation. If it becomes necessary for a day school pupil to drop out of high school, it is important for him to secure the advice of both the day and community adult school counselors to insure that the requirements for a diploma may still be met.

ENTRANCE REQUIREMENTS

Anyone over 18 years of age may attend community adult school; however, students who wish to become candidates for the elementary or high school diploma must meet certain requirements. High school graduates may attend, regardless of age.

Candidates for high school diplomas must have an eighth grade diploma, or its equivalent, and must have sufficient command of the English language to pursue a course of study at the secondary level.

Under some special circumstances, minors may be admitted to community adult schools, e.g., married minors not attending day school; students registered and pursuing courses in Continuation School; and students given special permission by the day and community adult school principals concerned.

Adults who seek an eighth grade diploma will be counseled for placement and instruction, regardless of previous schooling.

Credit earned in any community adult school may be transferred to another community adult school at the request of counselors. Students entering universities, state colleges, colleges, junior colleges, or trade schools after graduation should request that transcripts of credit be sent to the new institution in time to meet entrance requirements.

STANDARDS OF ACHIEVEMENT

Community adult schools use the letter marking system current in the Los Angeles City School District:

- A – Superior
- B – Better than Average
- C – Average
- D – Barely Passing
- Fail – Failure
- Inc. – Incomplete: Temporary mark until required completion date

Satisfactory scholarship must be achieved as evidenced by a high standard of progress in classwork, homework, and periodic subject tests. Likewise, students must maintain a satisfactory record of attendance and citizenship in each class throughout the semester in which credit is earned. Students shall not be allowed credit for a course in which they have attended less than 80% of the class time.

CREDIT

Credit is awarded on the basis of the Carnegie unit, i.e., 5 semester periods for classes scheduled 60 hours during the semester.

Credit is not awarded in units less than 2½ semester periods; in other words, for classes scheduled for fewer than 30 hours during the semester.

No credit is given toward high school graduation for classes in physical education, citizenship, elementary subjects, and English As a Second Language.

A minimum of 15 semester periods of work must be completed in residence at the community adult school granting the diploma.

Additional credit may not be granted through repetition of a subject for which credit has previously been awarded; however, a course may be repeated for the purpose of gaining a higher mark.

A minimum of 130 semester periods of work must be completed above the 9th grade for high school graduation.

WORK INCENTIVE PROGRAM (WIN)

Adult education courses are offered under contract arrangements with the Bureau of Adult Education, State Department of Education. These courses supplement the regular adult education program and provide basic education, English As a Second Language as well as vocationally oriented training. The intent of this program is to offer job training skills to welfare recipients. Some of these courses include: auto mechanics, television repair, and clerical training.

SPECIALLY FUNDED PROGRAMS

In addition to the regular Adult Education Program, the Adult Education Division of Los Angeles City Schools participates in many of the important educational activities financed under the following Federal Acts:

P.L. 90-576 Vocational Education Act of 1968

P.L. 89-10 Elementary Secondary Education Act

P.L. 87-415 Manpower Development and Training Act

P.L. 89-750 Adult Basic Education (1966 Amendment to E.S.E.A.)

P.L. 88-452 Economic Opportunity Act, Title II-A

P.L. 90-248 Social Security Act 1967 Amendment

The school district recognizes the valuable educational contribution of these various specially funded programs and grants course credits for learning activities which can be evaluated in terms of high school graduation requirements.

REQUIREMENTS OF ADULT EDUCATION PROGRAMS

HIGH SCHOOL DIPLOMA REQUIREMENTS IN FOUR-YEAR COMMUNITY ADULT SCHOOLS

	Semester Periods
BASIC CURRICULUM	90
ENGLISH	35
English 1-2	10
English 3-4	10
† Advanced Grammar and Composition	5
(Prerequisite: 20 semester periods of English courses which include composition)	
‡English electives	10
*SOCIAL SCIENCES	25
United States History 1-2	10
United States Government 1 (Civics)	5
Choice of:	5
United States Government 2	
Contemporary American Problems and Government	
World Affairs and Government	
‡Social Science electives (Example: Economics)	5
MATHEMATICS – SCIENCE	30
**10th-grade mathematics or above	10
10th-grade laboratory science or above	10
‡Mathematics or science electives	10
MAJOR SEQUENCE	40-50
Choice of:	
Academic, Fine Arts and Music, General, Business, Homemaking, Industrial, or Secretarial	
‡ELECTIVES	40-30
(Excluding physical education) Subjects selected by the student on the basis of his interest, aptitude, or occupational background.	
	Total 170

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

A STUDENT PLANNING TO ENTER COLLEGE SHOULD REFER TO THE ENTRANCE REQUIREMENTS OF THE COLLEGE OF HIS CHOICE

† Must be taken in residence.
‡ 9th-grade or above.
* Must include local and California history and government.
** 9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.

ACADEMIC MAJOR

	Semester Periods
BASIC CURRICULUM	90
ENGLISH	35
English 1-2	10
English 3-4	10
†Advanced Grammar and Composition	5
(Prerequisite: 20 semester periods of English courses which include composition)	
‡English electives	10
*SOCIAL SCIENCES	25
United States History 1-2	10
United States Government 1 (Civics)	5
Choice of:	5
United States Government 2	
Contemporary American Problems and Government	
World Affairs and Government	
‡Social Science electives (Example: Economics)	5
MATHEMATICS – SCIENCE	30
**10th-grade mathematics or above	10
10th-grade laboratory science or above	10
‡Mathematics or science electives	10
MAJOR SEQUENCE	40
Required Courses:	
foreign language	20
Choice of two of the following:	20
mathematics	10
foreign language	10
science	10
‡ELECTIVES	40
(Excluding physical education) Subjects selected by the student on the basis of his interest, aptitude, or occupational background.	
	Total 170

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

A STUDENT PLANNING TO ENTER COLLEGE SHOULD REFER TO THE ENTRANCE REQUIREMENTS OF THE COLLEGE OF HIS CHOICE

†Must be taken in residence.

‡9th-grade or above.

*Must include local and California history and government.

**9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.

BUSINESS MAJOR

	Semester Periods
BASIC CURRICULUM	90
ENGLISH	35
English 1-2	10
English 3-4	10
† Advanced Grammar and Composition	5
(Prerequisite: 20 semester periods of English courses which include composition)	
‡ English electives	10
*SOCIAL SCIENCES	25
United States History 1-2	10
United States Government 1 (Civics)	5
Choice of:	5
United States Government 2	
Contemporary American Problems and Government	
World Affairs and Government	
‡ Social Science electives (Example: Economics)	5
MATHEMATICS - SCIENCE	30
**10th-grade mathematics or above	10
10th-grade laboratory science or above	10
‡ Mathematics or science electives	10
MAJOR SEQUENCE	40
Required Courses: The major sequence may be completed by any course that carries credit and is listed in the Catalog of Authorized Subjects for Community Adult Schools in either of the following areas, so long as no fewer than 10 semester periods are completed in any one of these fields:	
Distributive Occupations: Finance, Insurance, Management and Supervision, Real Estate, Merchandising, Transportation and Traffic Management, Estate and Wills, General Business	
Office Occupations: Accounting, Business Data Processing, Business Machines, Law, General Business, Secretarial Science, and Investments	
‡ ELECTIVES	40
(Excluding physical education) Subjects selected by the student on the basis of his interest, aptitude, or occupational background.	
	Total 170

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

† Must be taken in residence.

‡ 9th-grade or above.

* Must include local and California history and government.

** 9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.

FINE ARTS AND MUSIC

	Semester Periods
BASIC CURRICULUM	90
ENGLISH	35
English 1-2	10
English 3-4	10
† Advanced Grammar and Composition	5
(Prerequisite: 20 semester periods of English courses which include composition)	
‡ English electives	10
*SOCIAL SCIENCES	25
United States History 1-2	10
United States Government 1 (Civics)	5
Choice of:	5
United States Government 2	
Contemporary American Problems and Government	
World Affairs and Government	
‡ Social Science electives (Example: Economics)	5
MATHEMATICS – SCIENCE	30
**10th-grade mathematics or above	10
10th-grade laboratory science or above	10
‡ Mathematics or science electives	10
MAJOR SEQUENCE	40
Required Courses: The major sequence may be completed by any courses that carry credit and are listed in the Music or Fine Arts section of the Catalog of Authorized Subjects for Community Adult Schools with no fewer than 10 semester periods in either field.	
‡ ELECTIVES	40
(Excluding physical education) Subjects selected by the student on the basis of his interest, aptitude, or occupational background.	
	Total 170

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

† Must be taken in residence.

‡ 9th-grade or above.

* Must include local and California history and government.

** 9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.

GENERAL MAJOR

	Semester Periods
BASIC CURRICULUM	90
ENGLISH	35
English 1-2	10
English 3-4	10
† Advanced Grammar and Composition	5
(Prerequisite: 20 semester periods of English courses which include composition)	
‡ English electives	10
*SOCIAL SCIENCES	25
United States History 1-2	10
United States Government 1 (Civics)	5
Choice of:	5
United States Government 2	
Contemporary American Problems and Government	
World Affairs and Government	
† Social Science electives (Example: Economics)	5
MATHEMATICS – SCIENCE	30
** 10th-grade mathematics or above	10
10th-grade laboratory science or above	10
‡ Mathematics or science electives	10
MAJOR SEQUENCE	40
Required Courses: The major sequence may be completed by any courses that carry credit and are listed in any two sections of the Catalog of Authorized Subjects for Community Adult Schools with no fewer than 10 semester periods in either field.	
‡ ELECTIVES	40
(Excluding physical education) Subjects selected by the student on the basis of his interest, aptitude, or occupational background.	
	Total 170

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

† Must be taken in residence.

‡ 9th-grade or above.

* Must include local and California history and government.

** 9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.



HOMEMAKING MAJOR

	Semester Periods
BASIC CURRICULUM	90
ENGLISH	35
English 1-2	10
English 3-4	10
† Advanced Grammar and Composition	5
(Prerequisite: 20 semester periods of English courses which include composition)	
‡ English electives	10
*SOCIAL SCIENCES	25
United States History 1-2	10
United States Government 1 (Civics)	5
Choice of:	5
United States Government 2	
Contemporary American Problems and Government	
World Affairs and Government	
‡ Social Science electives (Example: Economics)	5
MATHEMATICS – SCIENCE	30
** 10th-grade mathematics or above	10
10th-grade laboratory science or above	10
‡ Mathematics or science electives	10
MAJOR SEQUENCE	40
Required Courses: Any courses that carry credit and are listed in the Homemaking or Parent Education section of the Catalog of Authorized Subjects for Community Adult Schools.	
‡ELECTIVES	40
(Excluding physical education) Subjects selected by the student on the basis of his interest, aptitude, or occupational background.	
	Total 170

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

-
- † Must be taken in residence.
 - ‡ 9th-grade or above.
 - * Must include local and California history and government.
 - ** 9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.

INDUSTRIAL EDUCATION

	Semester Periods	
BASIC CURRICULUM	90	
ENGLISH	35	
English 1-2	10	
English 3-4	10	
†Advanced Grammar and Composition	5	
(Prerequisite: 20 semester periods of English courses which include composition)		
‡English electives	10	
*SOCIAL SCIENCES	25	
United States History 1-2	10	
United States Government 1 (Civics)	5	
Choice of:	5	
United States Government 2		
Contemporary American Problems and Government		
World Affairs and Government		
‡Social Science electives (Example: Economics)	5	
MATHEMATICS - SCIENCE	30	
**10th-grade mathematics or above	10	
10th-grade laboratory science or above	10	
‡Mathematics or science electives	10	
MAJOR SEQUENCE	50	
Required Courses:		
Drafting 1-2 or Drafting 1 and Blueprint Reading	10	
Industrial Mathematics 1-2 or equivalent	10	
The following courses must be selected from the Apprenticeship or Trade and Technical section of the Catalog of Authorized Subjects for Community Adult Schools.		
Six semesters in one area; a combination of four semesters in one area and two semesters in a second; or a combination of two semesters each in three areas	30	
Aero Space	Electrical and Electronics	Supervision
Automotive	Graphic Arts	Textile and Apparel
Building Construction	Metal	Woodworking
Drafting and Design	Personal and Public Service	
‡ ELECTIVES	30	
(Excluding physical education) Subjects selected by the student on the basis of his interest, aptitude, or occupational background.		
	Total 170	

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

† Must be taken in residence.

‡ 9th-grade or above.

* Must include local and California history and government.

** 9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.

SECRETARIAL MAJOR

BASIC CURRICULUM Semester Periods
90

ENGLISH 35
 English 1-2 10
 English 3-4 10
 † Advanced Grammar and Composition 5
 (Prerequisite: 20 semester periods of English courses which include composition)
 ‡ English electives 10

***SOCIAL SCIENCES** 25
 United States History 1-2 10
 United States Government 1 (Civics) 5
 Choice of: 5
 United States Government 2
 Contemporary American Problems and Government
 World Affairs and Government
 ‡ Social Science electives (Example: Economics) 5

MATHEMATICS - SCIENCE 30
 ** 10th-grade mathematics or above 10
 10th-grade laboratory science or above 10
 † Mathematics or science electives 10

MAJOR SEQUENCE 50

Required Courses:
 Typing 1, 2, 3, 4 20
 Shorthand 1, 2 10
 Business English 5
 Business Machines 5
 Office Procedures 5
 Business Mathematics 5

‡ELECTIVES 30
 (Excluding physical education) Subjects selected by the student on the basis of his interest,
 aptitude, or occupational background.

Total 170

A minimum of 15 semester periods of credit must be completed in residence at the community adult school granting the diploma. A minimum of 130 semester periods must be earned in courses above the 9th-grade level. Instruction in the principles of first aid is required.

† Must be taken in residence.

‡ 9th-grade or above.

* Must include local and California history and government.

** 9th-grade Algebra is acceptable. Bookkeeping does not meet this requirement.

EIGHTH-GRADE DIPLOMA

Adults may become eligible to receive the eighth-grade diploma in a community adult school by meeting the following requirements:

1. Achieving an average grade placement score of not less than 9.0 on an approved standardized test battery consisting of Language, Mathematics, and Reading.
2. Passing an examination in United States History, United States Government, and local and California history and government.
3. Completing 150 classroom hours in residence, which may be earned in elementary subjects, high school subjects, or a combination of both.

VETERANS' SERVICE ACTS

An honorably discharged United States veteran of World War II, or of the Korean Conflict, or who has served in the Armed Forces during the period up to, and including, the Vietnam Conflict, may qualify for a high school diploma by satisfying all of the following conditions:

1. Service in the Armed Forces not less than 90 days within one of the following periods: December 7, 1941 – December 31, 1946, or from June 27, 1950 up to and including the Vietnam Conflict.
2. Complete General Education Development Tests (high school level), prepared by the American Council on Education, with an average standard score of 45 or above on the five tests in the battery, and with a standard score of 35 or above on each of the five tests in the battery.
3. Meet the California State Legal requirements for 20 semester periods in United States History, United States Government, and local and California history and government.
4. Earn a minimum of fifteen semester periods of class work credit in residence in the community adult school granting the diploma.
5. File, with the school counselor, a full size photostatic copy of the "Report of Separation from the Armed Forces of the United States."

G.E.D. TESTING PROGRAM FOR NON-VETERANS

REQUIREMENTS FOR HIGH SCHOOL GRADUATION

1. An adult student must earn 170 semester periods of credit as listed in the Community Adult School Graduation Requirements in order to receive a high school diploma. It is possible for him to earn up to one-half of these credits by successfully passing certain tests, by work achievement, or by a combination of both.
2. A maximum of 85 credits may be earned by passing the G.E.D. tests with an average standard score of 45, and a minimum score of 35, on each of the five tests in the battery. Credits may be given in those areas with a score of 45 and above; however, a student may not earn more than half the total number of credits required for graduation by any combination of tests, examination, or work achievement credits.

3. The maximum credit allowed in each subject area tested, depending on the needs of the student, is as follows:

English – 20 of the 35 required
* Science – 10 of the 20 required
Mathematics – 10 to 20 of the 20 required

Social Science – 15 elective credits
Literature – 15 elective credits

4. Students participating in this program must be at least 21 years of age during the school year in which they take the tests.
5. When necessary, students may repeat tests after 6 months for the purpose of improving their scores.

CERTIFICATE PROGRAMS

BUSINESS EDUCATION CERTIFICATE PROGRAM

A Certificate of Proficiency issued by the Adult Education Division of the Los Angeles City Schools certifies that a student is considered vocationally competent in the General Office or Secretarial fields. It indicates that the student is prepared for employment in these areas.

Certificate of Proficiency has the following values:

1. Indicates that the student has followed and completed successfully a recommended sequence of courses.
2. Indicates that the student has employable skills. Proficiency tests must be passed with an acceptable score in order to receive a certificate.
3. Gives confidence to the student seeking employment because he has evidence of his vocational achievements.
4. Assists employers in evaluating job competency of prospective employees.
5. Helps the employee who is seeking retraining to concentrate on necessary skills and secure evidence of recent training and proficiency.

*Does not meet the laboratory science requirement.

GENERAL OFFICE CERTIFICATE

- A. **Required Courses:**
Typewriting 1–3
Bookkeeping 1
Business English
- Business Mathematics
Business Machines
Office Procedures
- B. **One of the following courses:**
Business Law
Bookkeeping 2
Civil Service Preparation
- Typing 4
Investments
Business Data Processing
- C. **Successful performance on a proficiency examination in:**
Typewriting
Correct English Usage
- Office Procedures

SECRETARIAL CERTIFICATE

- A. **Required Courses:**
Typewriting 1–3
Shorthand 1–3
Business English
Office Procedures
- Business Mathematics or
Bookkeeping
Business Machines
- B. **One of the following courses:**
Business Law
Typewriting 4
Civil Service Preparation
- Investments
Business Data Processing
- C. **Successful performance on a proficiency examination in:**
Typewriting
Shorthand and Transcription
- Correct English Usage
Office Procedures

THE DRAFTING CERTIFICATE PROGRAM

The drafting certificate program consists of a planned series of classes organized through the combined efforts of industry and the community adult school to provide sufficient skills for employment.

A drafting certificate will be awarded after the satisfactory completion of the option selected. He must prove his proficiency in each subject by passing a written and performance test with a grade of "B" or better.

MACHINE DRAFTING OPTION

Basic Drafting 1
Basic Drafting 2
Mechanical Drafting 1
Mechanical Drafting 2
Industrial Mathematics 1
Industrial Mathematics 2
Machine Shop 1
Machine Shop 2
Machine Drafting Detailing
Electro-Mechanical Drafting

ARCHITECTURAL DRAFTING OPTION

Basic Drafting 1
Basic Mathematics 1
Basic Mathematics 2
Architectural Drafting 1
Architectural Drafting 2
Architectural Drafting 3
Architectural Drafting 4
Architectural Drafting 5
Building Codes
*Building Construction Estimating

*Elective

THE REAL ESTATE CERTIFICATE PROGRAM

The real estate certificate program consists of a group of classes organized in cooperation with an advisory committee composed of leaders in the real estate field and teachers in the real estate program.

Objectives:

1. To provide opportunities for real estate salesmen and brokers to improve their competency on the job.
2. To provide training for adults preparing to enter the real estate business.
3. To award a certificate in recognition of successful completion of a program in real estate.

CERTIFICATE REQUIREMENTS

- A. A minimum of five courses and 220 course hours. (An additional course is required when the total hours of instruction in the five courses does not total 220 hours).
- B. Required Courses:
Real Estate Law I
Real Estate Appraisal I
Real Estate Sales
Real Estate Finance
- C. One of the following courses is required:
Property Management
Apartment House Law & Management
Escrow Practices
Condominiums
Business Law
Sales Psychology
Sales Speech
Public Speaking
Bookkeeping

A certificate in real estate will be awarded after successful completion of the requirements. Students must earn a grade of "B" or better and successfully pass a proficiency test for each required course.

PROGRAMMED INSTRUCTION

Continuous growth in the use of programmed instructional materials stems from an initial experiment at University Community Adult School during the 1962-63 school year and through subsequent trials and tests with materials in many other community adult schools. PI programs best taught with programmed materials to programmed texts and machine programs, and proven to be appropriate in terms of the level, scope, and amount of instruction, are listed in the index under Programmed Instruction.

Before community adult schools begin the courses that are identified by letters PI, the following should be considered:

A. The Value of Programmed Instruction

Well-developed programs are objective and lend themselves favorably to fact-oriented subject matter and concept development. Increase in the availability of materials eventually will remove many limitations.

An average reading level is desirable; however, poor readers improve when using PI. A number of sight and sound programs are being developed.

Average PI motivation equals the motivation of average classroom instruction. Although initially motivating, the effect of PI may wear off.

PI provides an inadequate vehicle for group interaction, which is desirable in many learning situations. Experience has revealed that PI provides a factual foundation for discussions led by teachers.

B. To the Teacher and Student

Programmed instruction defines goals for the student and the teacher.

Teacher-centered instruction can be supplemented by small PI blocks in many instances.

The teacher quickly and readily identifies student weaknesses after brief use of PI materials.

PI methodology frees the teacher for more individual student aid than does the regular instructional program.

Student self-esteem is improved by immediate and consistent rewards for learning; study habits are developed and/or improved.

Each student is encouraged to learn at his own pace.

C. For Adult School Program Development

Students may join a PI-oriented class at any time during the semester.

Classes normally not conducted due to budget limitations may be offered through the use of PI.

Those students who do not relate well to traditional instructional methods often adapt successfully to the use of PI.

D. Recommended Programmed Instruction Textbooks

The recommended programmed textbooks are listed in the *List of Authorized Textbooks* and/or Adult Education Division's memorandum on Programmed Instruction.

REQUIREMENTS TO QUALIFY FOR HIGHER EDUCATION

COLLEGES AND UNIVERSITIES

REQUIREMENTS FOR ADMISSION TO FRESHMAN STANDING IN THE UNIVERSITY OF CALIFORNIA

Graduation from high school.

Subject Requirements	Sem.	College Units
a) United States History	2	1
b) English (May include 9th grade)	6	3
c) Mathematics Four semesters of college preparatory mathematics. (May include 9th grade)	4	2
d) Science (11th or 12th grade college preparatory laboratory science in the same subject)	2	1
e) Foreign Language (In the same language; may include 9th grade)	4	2
f) Additional requirements in one of the following: Science (Chemistry or Physics in addition to d above) Mathematics Foreign Language (Either one additional year in the above language, or two years of a different language) Additional elective units to complete the minimum of 15 standard entrance units are also required.	2	1

SCHOLARSHIP REQUIREMENTS

An average mark of B in the (a) to (f) subjects listed above taken in the 10th, 11th, and 12th grades. A grade of A in one course may be used to balance a C in another, but may not compensate for a D or F.

RECOMMENDED SUBJECTS

For high school subjects recommended for a particular major to be undertaken at the University, consult the *Prerequisite and Recommended Subjects* publication of the Office of Relations with Schools of the University. Those courses that meet the above subject requirements will have letters UC following the subject number.

QUALIFICATION BY EXAMINATION

The University does not conduct entrance examinations but accepts the results of examinations administered by the Educational Testing Service for the College Entrance Examination Board. Requirements may change. For specific details, adults are referred to current University of California undergraduate admissions circulars and/or individual college catalogs at college nearest the individual's place of residence.

TESTING

Unless an adult meets scholarship and subject requirements, he may be able to qualify by examination alone. Refer to catalog mentioned above.



CALIFORNIA STATE COLLEGES

REQUIREMENTS FOR ADMISSION TO FRESHMAN STANDING

1. High school graduation and a minimum eligibility index established each year by the Chancellor of the State College System. This is based on a combination of high school grades and a score on the American College Test or the Scholastic Aptitude Test.
2. Probability of academic success, if 21 years of age or older, on the basis of ability and experience.

RECOMMENDED PREPARATION

Although no course pattern is required, the high school graduate who is properly prepared to undertake a full program of college study should have as minimal preparation classes in college preparatory English, mathematics, history and/or social science, a laboratory science, a foreign language, and study in speech, music, art, and other subjects contributing to a general academic background.

For additional information, students should consult the catalogs of individual colleges. Those in the Los Angeles area are:

California State College, Los Angeles
5151 State College Drive
Los Angeles, California 90032

California State College, Long Beach
6101 East Seventh Street
Long Beach, California 90804

California State College, Dominguez Hills
809 East Victoria Street
Dominguez Hills, California 90247

San Fernando Valley State College
18111 Nordhoff Street
Northridge, California 91326

LOS ANGELES JUNIOR COLLEGES

ADMISSION REQUIREMENTS

To be admitted to a college in the Los Angeles City Junior College District, an applicant must be a high school graduate, *or* must be 18 years of age or older, and capable of profiting from the instruction offered.

An application for admission and a high school transcript must be filed with the individual college in advance of registration. Specific dates for filing applications are published each year.

DEGREES AND CERTIFICATES

Upon completion of graduation requirements, junior college students may earn a degree of Associate in Arts or Associate in Science. The equivalent of two years full-time college course work is required for a degree. (A student may carry less than a full-time study load in day or evening classes over a longer period if he wishes.)

Certificates are awarded upon completion of certain occupational curricula which require less than two years of study.

CURRICULA

The colleges of the Los Angeles District offer two general types of curricula:

1. *Transfer programs* in which a student may complete the freshman and sophomore years of a bachelor's degree program, then take the junior and senior years at a four-year college or university.

A student who does not qualify for admission in freshman standing in a four-year college because of high school grades or subject deficiencies, may qualify for admission in advanced standing if he takes appropriate junior college courses, and earns an acceptable academic record.

2. *Occupational curricula* in which students learn specific skills while augmenting general education background.

More than 300 one-year, two-year, and apprenticeship programs are offered by the colleges of the Los Angeles City Junior College District. These include the following general occupational classifications:

Agriculture

Aircraft

Apparel

Art

Automotive and Engine

Building

Business

Communications

Foods

Electrical and Electronics

Engineering

Mechanical

Para-medical

Personal Service

Printing

Public Service

Technology

For additional information, students should consult the catalog and the counselors at any college in the Los Angeles City Junior College District.

Los Angeles City College
855 North Vermont Avenue
Los Angeles, California 90029
663-9141

East Los Angeles College
5357 East Brooklyn Avenue
Los Angeles, California 90022
263-7261

Los Angeles Harbor College
1111 Figueroa Place
Wilmington, California 90744
835-0161

Los Angeles Pierce College
6201 Winnetka Avenue
Woodland Hills, California 91364
347-0556

Los Angeles Southwest College
11514 South Western Avenue
Los Angeles, California 90047
757-9251

Los Angeles Trade-Technical College
400 West Washington Boulevard
Los Angeles, California 90015
746-0800

Los Angeles Valley College
5800 Fulton Avenue
Van Nuys, California 91401
781-1200/873-4010

West Los Angeles College
4800 Freshman Drive
Culver City, California 90230
836-7110

SCHOOL CALENDAR FOR 1969-70

SUMMER SESSION, 1969

Six-Week Summer Session: July 7, 1969 to August 15, 1969

FALL SEMESTER

September 15, 1969 to January 30, 1970

First Semester Begins and School Opens	September 15, 1969
Veterans Day (Legal Holiday)	November 11
Thanksgiving Holidays	
Thanksgiving Day (Legal Holiday)	November 27
School Holiday	November 28
Christmas Vacation	December 22 to January 2 incl.
First Semester Ends	January 30, 1970

SPRING SEMESTER

February 2, 1970 to June 19, 1970

Second Semester Begins and School Opens	February 2, 1970
Lincoln's Birthday (Legal Holiday)	February 12
Washington's Birthday – Sunday, February 22	
Observe Monday (Legal Holiday)	February 23
Easter Vacation (Easter Sunday, March 29)	
School Holidays	March 23 to 27, incl.
Second Semester Ends and School Closes	June 19, 1970

LIST OF COMMUNITY ADULT SCHOOLS AND SKILL CENTERS

COMMUNITY ADULT SCHOOLS

ADULT BILINGUAL SCHOOL	3014 Oregon Street Los Angeles 90023	262-1136
ADULT DEMONSTRATION SCHOOL	3721 West Washington Boulevard Los Angeles 90018	731-9347
BANNING COMMUNITY ADULT SCHOOL	1500 North Avalon Boulevard Wilmington 90744	834-2343
BELMONT COMMUNITY ADULT SCHOOL	1575 West Second Street Los Angeles 90026	626-3162
CAMBRIA COMMUNITY ADULT SCHOOL Foreign Student Department Instructional Materials Center	1510 Cambria Street Los Angeles 90017	483-4992
CENTRAL CITY OCCUPATIONAL CENTER	1646 South Olive Street Los Angeles 90015	748-6511
DORSEY COMMUNITY ADULT SCHOOL	3537 Farmdale Avenue Los Angeles 90016	292-0455
FAIRFAX COMMUNITY ADULT SCHOOL	7850 Melrose Avenue Los Angeles 90046	653-4085
FRANKLIN COMMUNITY ADULT SCHOOL	820 North Avenue 54 Los Angeles 90042	256-2144
FREMONT COMMUNITY ADULT SCHOOL	7676 South San Pedro Street Los Angeles 90003	778-1651
GARDENA COMMUNITY ADULT SCHOOL	1301 West 182nd Street Gardena 90247	323-2686
GARFIELD COMMUNITY ADULT SCHOOL	5101 East 6th Street Los Angeles 90022	262-5163
HOLLYWOOD COMMUNITY ADULT SCHOOL	1521 North Highland Avenue Los Angeles 90028	469-8668
HUNTINGTON PARK COMMUNITY ADULT SCHOOL	6020 Miles Avenue Huntington Park 90255	581-7720

JEFFERSON COMMUNITY ADULT SCHOOL	1319 East 41st Street Los Angeles 90011	231-1166
JORDAN COMMUNITY ADULT SCHOOL	2265 East 103rd Street Los Angeles 90002	564-2595
LINCOLN COMMUNITY ADULT SCHOOL	3501 North Broadway Los Angeles 90031	222-5204
LOS ANGELES COMMUNITY ADULT SCHOOL	4600 West Olympic Boulevard Los Angeles 90019	933-1346
MANUAL ARTS COMMUNITY ADULT SCHOOL	4131 South Vermont Avenue Los Angeles 90037	234-9177
NORTH HOLLYWOOD COMMUNITY ADULT SCHOOL	5231 Colfax Avenue North Hollywood 91601	766-8186
RESEDA COMMUNITY ADULT SCHOOL	18230 Kittridge Street Reseda 91335	343-1977
ROOSEVELT COMMUNITY ADULT SCHOOL	2611 East Lanfranco Street Los Angeles 90033	263-9388
SAN FERNANDO COMMUNITY ADULT SCHOOL	11133 O'Melveny Avenue San Fernando 91340	365-2569
SAN PEDRO COMMUNITY ADULT SCHOOL	1001 West 15th Street San Pedro 90731	833-3361
SOUTH GATE COMMUNITY ADULT SCHOOL	3351 Firestone Boulevard South Gate 90280	569-4187
UNIVERSITY COMMUNITY ADULT SCHOOL	11800 Texas Avenue Los Angeles 90025	477-2084
VAN NUYS COMMUNITY ADULT SCHOOL	6535 Cedros Avenue Van Nuys 91409	785-5427
VENICE COMMUNITY ADULT SCHOOL	13000 Venice Boulevard Los Angeles 90066	391-0411
WASHINGTON COMMUNITY ADULT SCHOOL	10860 South Denker Avenue Los Angeles 90047	757-4108
WESTCHESTER COMMUNITY ADULT SCHOOL	7400 West Manchester Los Angeles 90045	670-0443
WEST VALLEY OCCUPATIONAL CENTER	6200 Winnetka Avenue Woodland Hills 91364	346-3540

SKILL CENTERS

EAST LOS ANGELES SKILL CENTER	1230 South Monterey Pass Road Monterey Park 91754	263-6903
PACOIMA SKILL CENTER	13299-13301 Louvre Street Pacoima 91331	896-9558
VENICE SKILL CENTER	408 Sunset Avenue Venice 90291	392-4153
WATTS SKILL CENTER	840 East 111th Place Los Angeles 90059	564-4451

In the near future, it is anticipated that a fifth skill center will be established in the San Pedro-Wilmington area.

AUTHORIZED SUBJECTS

1-299 ACADEMIC EDUCATION

SUBJECT NO.

1-49 ENGLISH

- 1.1 PI,UC English 1**
 Grammar and usage; reading for information and appreciation; development of effective sentences; spelling; punctuation; practical written English for daily use; including better writing, making job applications; preparing accident reports; vocabulary.
 Equivalent to B9 English.
 (5 semester periods)
- 1.2 PI,UC English 2**
 Continuation of English 1; punctuation, capitalization, spelling, and vocabulary building; elements of good sentence structure and expression in letters and other written work; reading for information and appreciation.
 Equivalent to A9 English.
 Prerequisite: English 1, or equivalent.
 (5 semester periods)
- 1.3 PI,UC English 3**
 Application and review of grammar and sentence structure learned in English 1 and 2; advanced study of oral and written expression; concise use of words and expressions; elimination of common errors in speech and writing; vocabulary building; punctuation and capitalization; reading for information and appreciation.
 Equivalent to B10 English.
 Prerequisite: English 2, or equivalent.
 (5 semester periods)
- 1.4 PI,UC English 4**
 Refinement of skills in composition and letter writing; effective speech and pronunciation; conciseness and clarity in choice of words and expressions; review of grammar, punctuation, capitalization, and spelling; reading for information and appreciation.
 Equivalent to A10 English.
 Prerequisite: English 3, or equivalent.
 (5 semester periods)
- 5.1 PI,UC Grammar and Composition – (Intermediate)**
 Composition skills with emphasis on grammar; sentence structure; vocabulary building; punctuation; spelling; improving reading skills through comprehension.
 (5 semester periods)
- 5.2 PI,UC Grammar and Composition – (Advanced)**
 Review of fundamentals of grammar; sentence structure; good usage; vocabulary building; punctuation; spelling; pronunciation; emphasis on composition.
 Prerequisite: English 4, or equivalent.
 (5 semester periods)

PI See page xxvi.
 UC Course meets one of the subject requirements for the University of California.

ACADEMIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 7^{PI} English Review and Reading Improvement**
Developing and improving the techniques of speaking, reading, and writing the English language; emphasis on practical usage.
(10 semester periods)
- 10^{UC} American Literature**
Extensive reading in American literature, past and present; critical evaluation and discussion of material read; improvement of reading speed and comprehension; history of American literature; types of literature; development of appreciation for our American literary heritage.
(5 semester periods)
- 13^{UC} English Literature**
Selected reading in English literature, past and present; analysis and discussion of outstanding works; contributions of literature to the thinking, ideals, and arts of today; study of various types of prose and poetry, and their contributions to our literary heritage.
(5 semester periods)
- 16^{PI} Modern Literature**
Selected reading in various types of modern literature; study and development of appreciation for the novel, the short story, poetry, and essay; modern trends in literature; influence of literary works on contemporary life; literature of motion pictures, television, and radio.
(5 semester periods)
- 19 World Literature**
Selected reading in literature of other countries; contributions of other lands to our intellectual and artistic heritage; reading, oral and written analysis, and discussion of outstanding works.
(5 semester periods)
- 21.1 Journalism 1**
Newswriting; interviewing; privileges and responsibilities of the press; the place of the newspaper in the world of today.
(5 semester periods)
- 21.2 Journalism 2**
Continuation of Journalism 1; newswriting; journalistic practices; editorial and feature writing; proofreading; makeup; headline writing; privileges and responsibilities of the press.
Prerequisite: Journalism 1, or equivalent.
(5 semester periods)
- 22 Library Fundamentals**
Introduction to library organization, services, procedures, practices; offers specific instruction in the work of sub-professional library personnel; emphasizes the values of a career in librarianship.
(2½ semester periods)
- 27 Lip Reading**
Demonstration of vibration; exercises in formation of speech sounds; practice in lip reading; voice placement and tone improvement.
(5 semester periods)
-
- PI** See page xxvi.
UC Course meets one of the subject requirements for the University of California.

AUTHORIZED SUBJECTS

ACADEMIC EDUCATION

SUBJECT NO.

- 28 **Finger Spelling and Sign Language**
Manual alphabet and manual signs for use in communication among deaf and hard of hearing persons.
(5 semester periods)
- 30^{PI} **Power Reading**
Rapid reading techniques and reading skills; use of motion pictures, tachistoscope, controlled reading films, reading laboratories, and extensive vocabulary exercises; speed reading trials and individual reading.
(5 semester periods)
- 32 **Vocabulary Building**
Study of words, definitions, pronunciation, and spelling; development of appreciation for words to be used in building an effective vocabulary.
(5 semester periods)
- 33^{PI} **Semantics**
Intensive study and clarification of changes in the significance attached to words and forms, viewed as a factor in linguistic development; formation of more accurate expression and greater understanding of the naming of the elements of human communication.
(5 semester periods)
- 36 **Writing for Publication**
Special techniques of the short story; form and style used in writing articles; study of markets; writing for special journals and magazines; advice and constructive criticism of student writings.
(5 semester periods)
- 38 **Playwriting Workshop**
Special techniques of playwriting; criticism and evaluation of students' work; professional guest speakers; presentation of student-written plays.
(5 semester periods)
- 39 **Writing for Radio, Television, and Motion Pictures**
Special techniques of writing for radio, television, and motion pictures; types of material most in demand; methods of marketing material; constructive criticism of students' efforts.
(5 semester periods)
- 40 **Theater Arts Appreciation**
Comprehensive survey of modern theater; use of aural, visual, and other stimuli to communicate great ideas and ideals; emphasizes four theater disciplines: epic, absurd, fact, cruelty.
(5 semester periods)

50-89 LANGUAGES

- 51 **Chinese**
Introduction to Chinese; basic Chinese sounds with correct pronunciation and pitch; sentence structure; reading and writing Chinese characters; simple conversation; syntax necessary for correct usage.
(5 semester periods)

PI See page xxvi.

ACADEMIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 54.1^{PI,UC} French 1**
Introduction to French as currently spoken; correct pronunciation and enunciation; basic speech patterns; practical vocabulary; syntax necessary for simple oral and written French.
(5 semester periods)
- 54.2^{PI,UC} French 2**
Continuation of French 1; practical vocabulary of daily and travel expressions; continued study of syntax necessary for accurate spoken and written French.
Prerequisite: French 1, or equivalent.
(5 semester periods)
- 54.3^{UC} French 3**
Increased proficiency in oral and written use of French; review of syntax; practice in reading and discussion of simple stories; French customs and manners.
Prerequisite: French 2, or equivalent.
(5 semester periods)
- 54.4^{UC} French 4**
Intensive drill on French idioms and syntax; oral and written compositions; continued study of cultural background; introduction to literature.
Prerequisite: French 3, or equivalent.
(5 semester periods)
- 55^{PI} French Reading and Writing**
A review of French syntax and vocabulary as related to reading and writing; recommended for students desiring to improve French reading and writing skills and for persons preparing for university-level language reading examinations.
(10 semester periods)
- 57 French Conversation**
Intensive practice in speaking French to develop oral facility and aural comprehension; special attention to articulation, enunciation, and rhythm; vocabulary building of practical and idiomatic expressions; spontaneous expression of ideas in group discussions.
Prerequisite: French 2, or equivalent.
(10 semester periods)
- 60.1^{PI,UC} German 1**
Introduction to German; correct pronunciation and enunciation; basic speech patterns; practical vocabulary of daily expressions and idioms; syntax necessary for simple oral and written German.
(5 semester periods)
- 60.2^{PI,UC} German 2**
Continuation of German 1; practical vocabulary of daily and travel expressions; continued study of syntax necessary for accurate spoken and written German.
Prerequisite: German 1, or equivalent.
(5 semester periods)

PI See page xxvi.
UC Course meets one of the subject requirements for the University of California.

AUTHORIZED SUBJECTS

ACADEMIC EDUCATION

SUBJECT NO.

- 60.3** ^{PI,UC} **German 3**
 Increased proficiency in oral and written use of German; review of syntax; reading and discussions of simple stories; customs and manners of German-speaking people.
 Prerequisite: German 2, or equivalent.
 (5 semester periods)
- 60.4** ^{PI,UC} **German 4**
 Intensive drill on German idioms and syntax; expansion of vocabulary related to travel and science; oral and written composition; continued study of cultural background; introduction to literature.
 Prerequisite: German 3, or equivalent.
 (5 semester periods)
- 61** **Basic Scientific German**
 Specific German writing style utilized in technical and scientific literature, with emphasis on the most frequently used words, grammatical forms, and common word roots; practical applications to scientific fields of interest.
 (5 semester periods)
- 63** **German Conversation**
 Intensive practice in speaking German to develop oral fluency and aural comprehension; special attention to articulation, enunciation, and rhythm; vocabulary building of practical and idiomatic expressions; spontaneous expression of ideas in group discussions.
 Prerequisite: German 2, or equivalent.
 (10 semester periods)
- 66.1** **Hebrew 1**
 Introduction to Hebrew; alphabet and vowels; correct pronunciation and enunciation; vocabulary development for practical use; practice in elementary reading; syntax necessary for simple oral and written expression.
 (5 semester periods)
- 66.2** **Hebrew 2**
 Continuation of Hebrew 1; expansion of vocabulary; additional practice in speaking, reading, and writing; continued study of syntax necessary for accurate oral and written expression; introduction to classical Hebrew literature and contemporary publications; information on the history and culture of present-day Israel.
 Prerequisite: Hebrew 1, or equivalent.
 (5 semester periods)
- 69** **Italian**
 Introduction to current Italian; correct pronunciation; practical vocabulary; conversation, reading, and writing; fundamentals of grammar for simple oral and written expression. Information on customs, manners, and literature.
 (10 semester periods)
- 72** **Japanese**
 Introduction to Japanese; basic Japanese sounds with correct pronunciation and pitch; sentence structure; reading and writing of "Hiragana" and "Katakana"; simple conversation; syntax necessary for correct usage.
 (10 semester periods)

PI See page xxvi.
 UC Course meets one of the subject requirements for the University of California.

ACADEMIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 75 Norwegian**
Introduction to Norwegian; basic Norwegian sounds with correct pronunciation and pitch; sentence structure; fundamentals of grammar for simple oral and written expression. Information on customs, manners, and literature.
(10 semester periods)
- 78.1 Russian**
Introduction to Russian; pronunciation of Russian sounds; Russian script; simple sentence structure; syntax necessary for correct oral and written expression; practice in speaking, reading, and writing; information on customs, manners, and literature.
(10 semester periods)
- 78.2 Russian – Scientific**
Development of knowledge necessary for understanding of scientific and technical Russian; deciphering titles; reading graphs and Russian periodicals; reading and translating Russian scientific papers and other publications.
(5 semester periods)
- 79 Serbo-Croatian**
Introduction to Serbo-Croatian (Yugoslav); correct pronunciation, practical vocabulary; simple idioms; syntax necessary for correct oral and written expression; practice in speaking, reading, and writing; information on customs, manners, and literature; study of both Roman and Cyrillic alphabets.
(10 semester periods)
- 80^{PI} Introduction to Spanish**
Introduction to Spanish pronunciation, structure, and basic vocabulary; overview of Spanish grammar, including all major tenses and correct conversational usage; recommended for native speakers to improve reading ability in the language, and for persons preparing for university language reading examinations; or as a review course for persons who have previously studied Spanish.
Credit equivalent to Spanish 1.
(5 semester periods)
- 81.1^{UC} Spanish 1**
Introduction to current Spanish; correct pronunciation; basic speech patterns; practical vocabulary of daily expressions and idioms; grammar necessary for simple oral and written Spanish.
(5 semester periods)
- 81.2^{UC} Spanish 2**
Continuation of Spanish 1; practical vocabulary of useful daily and travel expressions; syntax necessary for accurate written and spoken Spanish.
Prerequisite: Spanish 1, or equivalent.
(5 semester periods)
- 81.3^{UC} Spanish 3**
Increased proficiency in oral and written use of Spanish; reading and discussion of simple stories; review of syntax; customs and manners of Spanish-speaking people.
Prerequisite: Spanish 2, or equivalent.
(5 semester periods)

PI See page xxvi.

UC Course meets one of the subject requirements for the University of California

AUTHORIZED SUBJECTS

ACADEMIC EDUCATION

SUBJECT NO.

- 81.4 UC Spanish 4**
 Reading and discussion of current topics from Spanish language newspapers, magazines, and short stories; intensive drill on Spanish idioms and syntax; oral and written compositions; continued study of cultural backgrounds; introduction to literature.
 Prerequisite: Spanish 3, or equivalent.
 (5 semester periods)
- 83 Conversational Spanish for School District Personnel**
 Practice in speaking Spanish to develop oral facility and aural comprehension; articulation, enunciation, and rhythm; vocabulary building of practical and idiomatic expressions related to school or going to school; emphasis on providing adequate communication between school personnel and Spanish-speaking persons.
 (10 semester periods)
- 84 Spanish Conversation**
 Intensive practice in speaking Spanish to develop oral facility and aural comprehension; special attention to articulation, enunciation, and rhythm; vocabulary building of practical and idiomatic expressions; spontaneous expression of ideas in group discussions.
 Prerequisite: Spanish 2, or equivalent.
 (10 semester periods)
- 85 Sociological Aspects of Interviewing in Spanish**
 Techniques needed by social welfare personnel to converse with the non-English speaking client. Special emphasis is given to the recognition of cultural differences as they affect the interview.
 (5 semester periods)
- 86 Swahili**
 Introduction to Swahili; correct pronunciation; practical vocabulary; simple idioms; syntax necessary for correct oral and written expression; practice in speaking, reading, and writing; customs, manners, literature.
 (5 semester periods)
- 87 Swedish**
 Introduction to Swedish; pronunciation and rhythm; practical vocabulary; simple idioms; syntax necessary for correct oral and written expression; practice in speaking, reading, and writing; information on customs, manners, and literature.
 (10 semester periods)
- 90-129 MATHEMATICS**
- 91.1 PI,UC Algebra 1**
 Positive and negative numbers; simple equations; formulas; polynomials.
 Prerequisite: Basic Mathematics, or equivalent.
 (5 semester periods)
- 91.2 PI,UC Algebra 2**
 Continuation of Algebra 1; review of fundamentals; equations; factoring; radicals; simple quadratics.
 Prerequisite: Algebra 1, or equivalent.
 (5 semester periods)

PI See page xxvi.
 UC Course meets one of the subject requirements for the University of California.

ACADEMIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 91.3^{PI,UC} Algebra 3**
 Review of Algebra 2; products and factors; fractions; simultaneous equations; powers and roots; quadratic equations.
 Prerequisite: Algebra 2, or equivalent.
 (5 semester periods)
- 91.4^{PI,UC} Algebra 4**
 Systems of equations; graphs; ratios; proportions and variations; numerical trigonometry.
 Prerequisite: Algebra 3, or equivalent.
 (5 semester periods)
- 92^{PI} Arithmetic Review**
 Review of number combinations in addition, subtraction, multiplication, and division.
 (5 semester periods)
- 94.1^{PI} Basic Mathematics 1**
 Addition, subtraction, multiplication, division of whole numbers, fractions, and decimals; per cent; square root.
 (5 semester periods)
- 94.2^{PI} Basic Mathematics 2**
 Continuation of Basic Mathematics 1; review of fundamentals; area and volume of geometric figures; measurements; metric system; algebra of simple formulas.
 Prerequisite: Basic Mathematics 1, or equivalent.
 (5 semester periods)
- 95 Practical Mathematics**
 Review of arithmetic fundamentals; development of understanding and use of computational skills involving money and banking, insurance, home rentals, leasing, sales and purchases, contract buying, interest, budgeting, taxation, and graphs.
 (5 semester periods)
- 96^{PI} Introduction to Modern Mathematics**
 New concepts of modern mathematics, including structure and application through discovery methods; mathematical patterns. Less emphasis on computation and more on the "why" of problem-solving.
 (5 semester periods)
- 97.1^{PI} High School Mathematics 1**
 Functional uses of arithmetic, percentage, measurement, and consumer mathematics; understanding number concepts, use of formulas, estimation, and simple statistical graphs; space perception; intuitive geometry, informal trigonometry, the metric system, application of mathematical principles to the solution of practical problems.
 (5 semester periods)
- 97.2^{PI} High School Mathematics 2**
 Functional uses of arithmetic, percentage, measurement and consumer mathematics; understanding of number concepts; use of formulas, estimation, simple statistical graphs; space perception; intuitive geometry, informal trigonometry, metric system; applications to practical problems.
 (May be substituted for Basic Mathematics 2, but credit may not be granted for both.)
 (5 semester periods)
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- PI** See page xxvi.
UC Course meets one of the subject requirements for the University of California.
8

AUTHORIZED SUBJECTS

ACADEMIC EDUCATION

SUBJECT NO.

- 100 Industrial Algebra**
 Application of algebra to trade problems; equations and formulas; graphical representation; logarithms.
 Prerequisite: Industrial Mathematics, or equivalent.
 (5 semester periods)
- 103 Industrial Descriptive Geometry**
 Application of descriptive geometry to trade problems; fundamentals; orthographic projection; plotting of points and lines; line directions; true length of lines and planes; trade problems relating to points; planes and solids; intersection and development of surfaces; revolutions and counter revolutions.
 Prerequisite: Industrial Trigonometry, or equivalent.
 (5 semester periods)
- 106.1 Industrial Mathematics 1**
 Application of mathematics to trade problems; review of arithmetic and fundamental operations in algebra and geometry.
 (5 semester periods)
- 106.2 Industrial Mathematics 2**
 Application of mathematics to trade problems; principles of geometry, shop trigonometry, logarithms; use of slide rule.
 Prerequisite: Industrial Mathematics 1, or equivalent.
 (5 semester periods)
- 109 Industrial Trigonometry**
 Applications of trigonometry to trade problems; angles and functions of angles; the right triangle; functions of angles of any magnitude; functions of two angles; sine and cosine laws.
 (5 semester periods)
- 112.1^{PI,UC} Plane Geometry 1**
 Basic concepts; postulates, axioms.
 Prerequisite: Algebra 1, 2, or equivalent.
 (5 semester periods)
- 112.2^{PI,UC} Plane Geometry 2**
 Continuation of Plane Geometry 1; review of basic concepts; problem solving; circles; measurements; logic; proportions.
 Prerequisite: Plane Geometry 1, or equivalent.
 (5 semester periods)
- 115 Slide Rule**
 The theory of the slide rule; problems involving multiplication, division, squares, cubes, square root and cube root; application to trigonometric and logarithmic problems.
 (2½ semester periods)
- 115.1^{PI} Slide Rule, Mathematical Notation and Measurement**
 Theory of the slide rule and reading of scales; problems involving multiplication, division, squares and cubes, square root, and cube root; mathematics of large and small numbers by use of powers, combined factors, commutative and distributive principles; metric system.
 (5 semester periods)
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- PI** See page xxvi.
UC Course meets one of the subject requirements for the University of California.

SUBJECT NO.

118^{UC} Solid Geometry
 Three-dimensional geometry; polyhedrons; prisms; cylinders; pyramids; cones, spheres.
 Prerequisite: Plane Geometry 2, or equivalent.
 (5 semester periods)

121^{PI,UC} Trigonometry
 Functions of acute angles; logarithms; solution of right and oblique triangles; trigonometric and logarithmic tables.
 Prerequisites: Algebra 3 and Plane Geometry 1, 2, or equivalent.
 (5 semester periods)

124^{UC} Mathematical Analysis
 Introduction of analytical methods by means of a study of fundamental definitions and theorems; the line; equation and locus; conic sections; algebraic curves of higher degree; basic concepts of space geometry.
 Prerequisites: Algebra 4, Trigonometry, or equivalent.
 (5 semester periods)

130-184 SCIENCES

131 Applied Chemistry
 Foods and nutrition; vitamins; preservation of food; textiles; removal of stains; drugs and medicines; cosmetics; paints; water purification; photography; laboratory experiments.
 Prerequisites: Chemistry 1, General Science 1, 2, or equivalent.
 (5 semester periods)

134.1^{PI,UC} Chemistry 1
 Structure and classification of matter; oxygen, hydrogen; solutions; acids, bases, and salts; ionization; valences; formulas; balancing equations; periodic table; problems involving laws of chemistry; laboratory experiments.
 (5 semester periods)

134.2^{PI,UC} Chemistry 2
 Continuation of Chemistry 1; important elements; non-metals; light and heavy metals; atomic reactions; food; clothing; drugs; cosmetics; latest chemical developments; laboratory experiments.
 Prerequisite: Chemistry 1, or equivalent.
 (5 semester periods)

137^{PI} General Science
 Introduction to science; living things; structures, habits, and use of plants; animals; the human body; diseases; diet; nature of matter; air; water; weather; the sun and its planets; the earth; magnetism and electricity; conservation of natural resources.
 (5 semester periods)

140.1^{UC} Biology 1
 Health, hygiene; parts and functions of the body; reproduction; first aid; alcohol; genetics; problems and laboratory activities.
 (5 semester periods)

PI See page xxvi.
UC Course meets one of the subject requirements for the University of California.

AUTHORIZED SUBJECTS

ACADEMIC EDUCATION

SUBJECT NO.

- 140.2^{UC} Biology 2**
 Continuation of Biology 1; structure, production, conservation, and use of plants; evolution; genetics; behavior; use and conservation of animals; problems and laboratory activities.
 Prerequisite: Biology 1, or equivalent.
 (5 semester periods)
- 141 Marine Biology**
 A general survey course of the many marine environments, of the varied animal species that live in the sea, and of the plants of the coastal waters.
 (5 semester periods)
- 143.1 Modern Science 1**
 Application of science to the modern world; social implications; transportation facilities; machines in our homes; instruments of communication; understanding our universe; science in everyday life; problems and laboratory activities.
 (5 semester periods)
- 143.2 Modern Science 2**
 Continuation of Modern Science 1 in its relationship to the modern world; contribution of photography, electricity, communications, machines, and air and space travel in everyday life; problems and laboratory activities.
 (5 semester periods)
- 146.1^{UC} Physical Science 1**
 Measurements; matter and motion; forces; work and power; the automobile; the airplane; problems and laboratory experiments.
 (5 semester periods)
- 146.2^{UC} Physical Science 2**
 Continuation of Physical Science 1; nature of sound, light, and electricity; telephone; radio; television; heating and refrigeration; air conditioning; chemistry in industry; problems and laboratory experiments.
 Prerequisite: Physical Science 1, or equivalent.
 (5 semester periods)
- 149.1^{UC} Physics 1**
 Physical laws and principles; measurements; mechanics of gases; force; motion; machines; heat; problems and laboratory experiments.
 (5 semester periods)
- 149.2^{UC} Physics 2**
 Continuation of Physics 1; electricity, sound; light; radio; electronics; atomic energy; cosmic rays; problems and laboratory experiments.
 Prerequisite: Physics 1, or equivalent.
 (5 semester periods)

PI See page xxvi.
 UC Course meets one of the subject requirements for the University of California.

ACADEMIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 152.1^{PI,UC} Physiology 1**
Organs of the human body; bones, tissues, and muscles; dissection of living and non-living materials.
(5 semester periods)
- 152.2^{UC} Physiology 2**
Continuation of Physiology 1; systems of the body; laboratory demonstrations; laboratory experiments.
Prerequisite: Physiology 1, or equivalent.
(5 semester periods)
- 158 Commercialization of Mineral Resources**
General extraction and commercial uses of mineral materials of the earth; distribution, character, occurrence, and formation.
(5 semester periods)
- 160.1^{PI} Astronomy 1**
The sun, the planets, the constellations, and the night sky.
(5 semester periods)
- 161 Fundamentals of Geology**
History of the earth; oceanic movements and temperature; atmospheric movements and temperature; constitution of rocks; condition, structure, and arrangement of rock masses; movements of the earth's crust.
(5 semester periods)
- 164.1 Mineral Identification 1**
Physical, chemical, optical, and crystal properties of minerals; description, nomenclature, structure, and composition; methods of identification.
(5 semester periods)
- 164.2 Mineral Identification 2**
Continuation of Mineral Identification 1; identification of minerals through their properties; physical, chemical, and optical laboratory techniques; valuation.
(5 semester periods)
- 166 Mineralogy**
Identification of rocks; properties of composition, texture, and structure; examination of hand specimens; instruments.
(5 semester periods)
- 168 Aeronautics**
History of aviation; theory of flight; airfoil and lift; drag; thrust and torque; gravity; stability; load factors; controls; instruments; operation and servicing of aircraft types; structure; identification and spotting.
(5 semester periods)
- 185-229 SOCIAL SCIENCES**
- 186.1^{UC} United States History 1**
Political, social, and economic development of the United States; discovery; colonial period; struggle for independence; establishment of constitutional government; the westward movement; sectionalism and the Civil War; personalities, ideas, and events in American history.
(5 semester periods)
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- PI** See page xxvi.
UC Course meets one of the subject requirements for the University of California.

AUTHORIZED SUBJECTS

ACADEMIC EDUCATION

SUBJECT NO.

- 186.2^{UC} United States History 2**
 Continuation of United States History 1; development of the United States from 1895 to present; industrial expansion; foreign relations; the two world wars; the emergence of the United States as a world power; California history.
 Prerequisite: U.S. History 1, or equivalent.
 (5 semester periods)
- 188.1^{PI,UC} United States Government 1**
 Legislative, executive, and judicial framework and functions of national, state, and local governments; traditions, practices, and personalities; privileges and responsibilities of individuals under a democratic form of government; problems in California government.
 (5 semester periods)
- 188.2^{PI} United States Government 2**
 A problem-solving approach to the study of United States government, including contemporary American problems, economics, international relations or current history; operation of state and local governments.
 (5 semester periods)
- 191 Political Problems**
 Historical and current political problems, both domestic and foreign; group discussions based upon films, recordings, and reading assignments.
 (5 semester periods)
- 194 Contemporary American Problems and Government**
 Psychological, sociological, and economic aspects of life related to contemporary American problems in government.
 (5 semester periods)
- 197 United States Government and World Affairs**
 International, national, and local events; interpretations from backgrounds of geography, history, and social sciences as they affect our government.
 (5 semester periods)
- 199^{PI} United States Geography**
 Physical, economic, and political aspects of important areas of the United States; influences of geography on political, economic and social problems.
 (5 semester periods)
- 200 World Geography**
 Physical, economic, and political aspects of important world areas; influences of geography on world problems and conditions.
 (5 semester periods)
- 204.1 World History 1**
 Social, economic, and political history of mankind from the earliest civilization to 1800; contributions of past civilizations to modern life; persons and ideas that have influenced human progress.
 (5 semester periods)

PI See page xxvi.
 UC Course meets one of the subject requirements for the University of California.

ACADEMIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 204.2 World History 2**
Continuation of World History 1 from 1800 to the present; contributions of past civilizations to modern life; persons and ideas that have influenced human progress.
Prerequisite: World History 1, or equivalent.
(5 semester periods)
- 208 California History and Government**
Survey of four centuries of California history, from early Indian period to present; reviews the wide variety of California geography, including topography, climate; involves study of political heritage and formation, changes, present structures of California government.
(5 semester periods)
- 209 Mexican-American History and Culture**
A sketch of the culture of Mexico, including political and economic history, to develop a better understanding of the people, their problems, and the solutions to the problems. Takes into consideration the Mexican and Spanish migration to the United States and the problems that have resulted.
(5 semester periods)
- 210 Negro History**
Political, social, and economic development of the Negro in the United States.
(5 semester periods)
- 211 Archeology of Mexico**
Review of archeological discoveries, ranging from sites of early man, or European contact locations, to areas influenced by Mexican aboriginal cultures. Regions adjacent to present-day Mexico, both to the north and south, will be discussed with regard to past interplay of cultures. In addition to archeological data, information from surviving aboriginal cultures will be considered to foster an appreciation of Mexican culture and history and its bearing on present-day social organization.
(5 semester periods)
- 212 Philosophy and Society**
Philosophies of various societies, their effect upon basic ideas, beliefs; man's philosophic viewpoints are active in nature and profoundly affect political, social, and family structures; the relationship between philosophy and democracy.
(5 semester periods)
- 213^{PI} Applied Psychology**
Investigation of human behavior as an aid to solving practical human problems; understanding of interests, aptitudes, desires, and "drives" in personal adjustment; psychology in human relations.
(5 semester periods)
- 214^{PI} Physiological Psychology**
Reasons for psychological reactions through the physical, rather than the reasoning, system; includes functions of touch, sight, and similar receptors in response to stimuli.
(2½ semester periods)

PI See page xxvi.

SUBJECT NO.

- 216 Social Psychology**
 Application of principles of psychology to individual and social relationships; the family and its place in society; background and development of our society; psychology in human relations; problems of a changing social and cultural environment.
 (5 semester periods)
- 217 Ways of Mankind**
 Exploration and study of the ways of mankind in relation to his culture, language technology, education, family, status, authority, values, religion, ethics, and society in general.
 (2½ semester periods)
- 218 Introduction to the Humanities**
 Materials and forms out of which any single work of art is created; encouragement of the individual to enlarge his perceptions and appreciation of all the art form including literature, music, and the visual arts through a study of outstanding works from the entire broad field of the humanities.
 (5 semester periods)
- 219^{PI} Economics**
 Characteristics and functioning of the economic system; production and distribution of wealth; laws of supply and demand; business organization; government regulations; labor problems; money and banking; business fluctuations.
 (5 semester periods)
- 220 Comparative Religions**
 Introduction to the major religious movements which have existed for more than a century; a concise survey of the origin, the sacred scriptures, the historical development, and the contributions of the eleven major religions.
 (5 semester periods)
- 221 Contemporary Moral Issues**
 Course content is divided into discussion topics, based upon assigned readings from the textbook and other collateral readings; expert knowledge and opinion will be introduced whenever possible, principally by inviting specialists in various fields to take part in the discussions.
 (5 semester periods)
- 222 Guidance**
 Group diagnostic testing of students; aptitudes; mental ability; interest inventories; occupational opportunities; self-evaluation.
 (5 semester periods)
- 223 Vocational Guidance**
 Group guidance toward successful employment; personal preferences, special abilities, academic achievement; testing and its relationship to credit; employment and job selection; occupational orientation covering job and physical requirements, working conditions, and sources of training.
 (5 semester periods)

PI See page xxvi.

ACADEMIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 225 Afro-American Culture**
A survey class covering the historical and cultural background of the Afro-American, including the folklore, dance, music, art, literature, and science.
(5 semester periods)
- 230-249 SPEECH*
- 231 Public Speaking**
Fundamentals of effective public speaking; practice in organization and delivery; development of voice, vocabulary, diction, and poise; public-address system techniques; elements of parliamentary procedure.
(5 semester periods)
- 234 Advanced Speech**
Continuation of Public Speaking; review of fundamentals; parliamentary procedure; group discussion forums; the panel, forum, symposium, debate; interviews; analysis of the duties and responsibilities for effective speech used by officers of civic, business, and professional organizations.
Prerequisite: Public Speaking, or equivalent.
(5 semester periods)
- 237 Speech Correction**
Physical and psychological aspects of speech; factors affecting individual speech; correction of individual speech problems by analysis, application, and practice; development of voice and vocabulary.
(5 semester periods)
- 240 Principles of Drama**
History of drama; great plays and playwrights; principles of stage movement, voice projection and expression, and pantomime; acting of scenes and one-act plays with emphasis on voice and characterization.
(5 semester periods)
- 241 Basic Acting Techniques**
Voice and voice qualities, voice tones, speech, diction, characters, concentration, poise, pantomime, dramatic construction, artistic feeling, inspiration, stage areas, stage direction, analysis of scenes; preparation of actors for participation in little theater groups.
(5 semester periods)
- 243 Play Production**
Techniques of acting in modern dramatic media; workshop experimentation in acting, staging, lighting, and costuming plays; study of theatrical make-up; production of a modern three-act play for public performance.
Prerequisite: Principles of Drama, or equivalent.
(5 semester periods)
- 246 Radio and Television Acting**
Microphone techniques; emphasis on voice characterization for radio; workshop in announcing, newscasting, interviewing, radio and television drama.
(5 semester periods)

300-699 BUSINESS EDUCATION

SUBJECT NO.

300-319 ACCOUNTING

- 301.1 Bookkeeping 1**
Fundamentals of double-entry record-keeping as applied to proprietorship; systematic recording of business transactions; use of journals and ledgers; sales and purchase transactions; banking; payrolls; introduction to worksheets, statements, and closing entries.
Prerequisite: Business Mathematics, or equivalent.
(5 semester periods)
- 301.2 Bookkeeping 2**
Review of bookkeeping principles: Combination journal, petty cash fund, problems relating to sales and purchases, payroll taxes and reports, depreciation of fixed assets, disposing of fixed assets, bad debts and accounts receivable, use of cash register, sales taxes, other sales and purchases transactions, notes and interest, and accrued expenses.
(5 semester periods)
- 304.1 Accounting 1**
A survey of principles and practices of specialized business operations involving departmental and payroll accounting; worksheet adjustments for valuation accounts; accrued, deferred, and prepaid items; and partnership accounting.
Prerequisites: Bookkeeping 1, 2, or equivalent; Business Machines recommended.
(5 semester periods)
- 304.2 Accounting 2**
Principles and practices of various types of controls and records used in business; corporation accounting; accounting for various types of sales; manufacturing accounting; and interpretation of accounting records.
Prerequisites: Bookkeeping 1, 2; Accounting 1, or equivalent; Business Machines recommended.
(5 semester periods)
- 305 Government Budget Preparation**
Elementary budget theory; practical applications in the preparation, execution, and control of a governmental budget.
(5 semester periods)
- 316.1 Income Tax – Personal**
State and federal income tax laws; problems associated with tax returns of individuals; practice in the preparation of tax forms.
(5 semester periods)
- 316.2 Income Tax – Accountants**
State and federal tax laws for corporations, partnerships, estates, and trusts; advanced accounting procedures for accountants preparing returns for clients.
(5 semester periods)
- 318 Tax Planning for Small Business**
Introduction to small business organizations; accounting systems used by small businesses; Federal tax laws and tax forms dealing with small businesses; procedures for preparation of income tax returns; methods of computing taxable income and income tax liability; procedures for preparation, filing, and payment of the declaration of estimated income tax.
(5 semester periods)

SUBJECT NO.

320-339 BUSINESS DATA PROCESSING

- 321 Key Punch**
Instruction and practice in the use of the alphabetic and numeric key punch machines; applications to business problems.
Prerequisite: Typing speed of at least 40 words per minute.
(5 semester periods)
- 322 Introduction to Data Processing**
Orientation to data processing; the data processing cycle; development of methods, punched cards, systems, number systems, program control, programming systems.
(5 semester periods)
- 323 Basic Data Processing Machine Operation**
Theory and practice of operation and basic programming of common punch card equipment; purpose of tabulating cards; uses and relationships of machines as follows: interpreter, sorter, reproducer, collator, calculator, tabulator; flow charts; job timing.
Prerequisite: Introduction to Data Processing, or approval of instructor.
(5 semester periods)
- 326 Electronic Computer Programming**
Basic principles of programming; a stored program system, using both tape and card methods; machine components; flow charts; instruction format; operation codes; timing; checking; symbolic programming systems; autocoder; input-output control systems; console operations.
(5 semester periods)
- 327.1 Electronic Computer Programming 1**
Principles of programming and operation of various types of electronic data processing machines; job planning flow charts; block diagramming; programming; machine coding; console operation.
(5 semester periods)
- 327.2 Electronic Computer Programming 2**
Principles of programming and operation; data processing; feasibility studies; job planning; charting and programming; demonstration and practice.
(5 semester periods)
- 329.2 Electronic Computer Programming – Ramac 305 Machine**
Principles of programming and operation of the 305 Random Access Memory Accounting Machine; linear data processing; feasibility studies; job planning; charting and programming; demonstration and practice.
(5 semester periods)
- 331 PERT and Critical Path Method**
Introduction to the latest techniques in planning, scheduling, and control; practical training in PERT (Program Evaluation and Review Techniques) and CPM (Critical Path Method) as management processes; principles of planning for simple to complex data processing jobs, daily business problems, and construction projects.
(5 semester periods)

SUBJECT NO. *340-359 BUSINESS MACHINES*

- 341.1 Business Machines – Introduction**
 Introduction to the use of business machines; adding machines (full and ten-key); bookkeeping machines (accounting, billing, posting); calculators (key-driven, printing rotary); comptometry (key-driven calculator).
 (5 semester periods)
- 341.2 Business Machines – Advanced**
 Increased proficiency in the use of business machines; specialization for competency in selected machines; advanced problems and applications of machine usage.
 (5 semester periods)
- 345 Key-Driven Calculators**
 Introduction to key-driven calculators; fundamental techniques of operation; basic problems involving addition, subtraction, multiplication, and division; drills to increase speed and accuracy; application of fundamentals to various types of business problems.
 Prerequisite: Business Mathematics.
 (5 semester periods)
- 346 Comptometry 1-6 – Key-Driven Calculators**
 Introduction to the use of comptometer or Burroughs calculator (key-driven calculator); fundamental techniques of operation; basic problems involving addition, subtraction, multiplication, and division; drills to increase speed and accuracy; application of fundamentals to various types of business problems.
 (10 semester periods)
- 352 Transcribing Machines**
 Instruction and practice in the operation of various types of transcribing machines.
 Prerequisite: Typewriting 3, or equivalent.
 (2½ semester periods)

360-374 FINANCE

- 361 Fundamentals of Credit**
 Classification and appropriate uses of credit; forms used to apply for, and establish credit; criteria and sources of information; functions of each section of a typical credit department.
- 364 Credit and Collections**
 Suitable and effective collection devices; techniques, principles, and general practices; analysis of financial statements; types of collection letters; skiptracing; legal provisions; court actions.
- 370^{PI} Personal Finance**
 Application of principles of finance to problems in everyday living; analysis of the functions of financial institutions; selection of services for borrowing money, buying insurance, buying a home, and making investments; keeping financial records; importance of making a will.
 (5 semester periods)
- 373 Investments**
 Principles of investment; various types of investments; operation of investment markets and sources of information.
 (5 semester periods)

PI See page xxvi.

SUBJECT NO.

375-419 GENERAL BUSINESS

- 375 Business Organization and Practice**
Business for workers and consumers; business organization, ownership, and management; thrift, budgeting, money and banking, credit, insurance, buying goods and services, business and government, personal financial management.
(5 semester periods)
- 378^{PI} Business English**
Effective use of English in business; general review of composition, grammar, and usage; emphasis on sentence structure, punctuation, word usage, business vocabulary, and spelling.
Prerequisite: English 2, or Equivalent.
(5 semester periods)
- 380 Business Correspondence**
The use of written communications in business; fundamentals of good letter writing; practical experience in writing business letters, inter-office communications, and reports.
Prerequisite: Business English, or equivalent.
(5 semester periods)
- 382 Report Writing**
Purposes of reports and memoranda, principles of clear statement, logical patterns of organization; outlines; section and paragraph headings; diction; punctuation; paragraph and sentence structure; mechanics of style; introductory section, transitional passages, concluding sections; checklists for evaluating reports and memoranda; psychology of communication.
(5 semester periods)
- 385^{PI} Business Mathematics**
Review of fundamentals; general problems of budgeting; banking; interest and credit; income tax; accounting; installment buying; wages; related business activities.
(5 semester periods)
- 388 Civil Service Preparation**
Review of fundamentals of arithmetic, grammar, spelling, punctuation, and capitalization; vocabulary building; occupational information, including requirements for civil service or business positions.
(5 semester periods)
- 401 Principles of Storekeeping and Warehousing**
Survey of fundamentals of storekeeping and warehousing; organization and function of store branch; order selection; checking and packing; receiving and shipping; material handling equipment; basic business procedures; safety practices; security; inventory procedures and methods.
(2½ semester periods)
- 420-439 INSURANCE*
- 421 Fundamentals of Insurance**
Introduction to the history, ethics, economics, and types of insurance; state laws which govern transactions; agency and brokerage contracts; vocational opportunities; insurance coverage planning; preparation for license examination.
(5 semester periods)

PI See page xxvi.

SUBJECT NO.

- 424 **Casualty Insurance**
 Application of general principles of insurance to all types of casualty, including bodily injury and property damage; workmen's compensation; liability; burglary, robbery, and theft; plate glass suretyship; fidelity and forgery; boiler and machine insurance; accident and health insurance.
 (5 semester periods)
- 427 **Fire and Inland Marine Insurance**
 Application of general principles of insurance to policy contracts and underwriting of fire, inland marine, and allied property insurance lines; insurable interest; the policy; extensions; limited coverages; insurance code; basic fire coverages; provisional forms.
 (5 semester periods)
- 430 **Automobile Material Damage Adjustment Insurance**
 Nomenclature; Flat Rate Manual; overlap; uniform sequence; analyzing the estimates; damage to automatic transmissions, power steering, and power brakes; frame damage; plastic body repairs; making estimates.
 (5 semester periods)
- 433 **Life Insurance Fundamentals**
 Introduction to fundamentals of life insurance; types of life insurance carriers; life policy contracts; policy conditions; selection of risks; policy applications and their processing.
 (5 semester periods)
- 435 **Insurance Inspecting**
 Fundamentals of investigating; methods of reporting; interview techniques; legal doctrines; injury and illness evaluation; terminology, including insurance, medical, and legal terms.
 (5 semester periods)
- 436 **Insurance Claims Adjustment**
 Principle of claims handling; first- and third-party claims; policy coverages; damage appraisals; legal doctrines, including law of torts; injury evaluations; illnesses, injuries, and other medical conditions.
 (5 semester periods)
- 439 **Medical Insurance**
 Organization and types of medical insurance for groups; professional liability and malpractice; Blue Shield; Blue Cross; workmen's compensation; accident and health coverage; indemnity and public liability.
 (5 semester periods)
- 440-454 LAW*
- 441.1 **Business Law 1**
 Court procedure; elements of contracts; bailments; personal property; sales contracts; negotiable instruments.
 (5 semester periods)
- 441.2 **Business Law 2**
 Partnership and corporation law; law of agency; real property and leases; estates and trusts; bankruptcy; insurance.
 Prerequisite: Business Law 1, or equivalent.
 (5 semester periods)

SUBJECT NO.

- 444 Law for Laymen**
Various phases of law that affect the layman; contracts, agents, sales, domestic relations, torts, wills, securities; transactions in personal property and real property, including land lord and tenant relationships.
(5 semester periods)
- 447 Estate Planning – Laws of Wills, Trusts, and Estates**
Descent and distribution of property in California; administration of estates; gift and estate taxes; trusts; probate; charitable gifts and the proper use of insurance; planning your will and estate.
(5 semester periods)
- 450 Building Construction Laws**
Lien laws as set forth in the Business and Professional Code; drawing and making of building contracts; relation of the California Contractor License Board to contractors and corporations dealing in building construction.
(5 semester periods)
- 455-509 MANAGEMENT AND SUPERVISION*
- 456 Principles of Management**
Survey of various phases of business; organization; operation, finance, personnel, marketing; planning; business and government relations.
(5 semester periods)
- 459 Small Business Management**
Organization and operation of a business; selecting the location; establishing the specialty; long- and short-term budgeting; record-keeping; managerial aids; efficient use of personnel and merchandise.
(5 semester periods)
- 462 Office Management**
Practical office methods; forms control; equipment and supplies; budgetary control; reports; procedure for simplifying work; personnel supervision.
(5 semester periods)
- 465 Sales Management**
Organization of sales departments, including recruiting, selecting, training, directing, and compensation; determination of territories, sales policies, quotas, budgets, and expenses; liaison with other management divisions, particularly advertising and credit departments.
(5 semester periods)
- 466 Travel Agency Management**
Development of air travel; air geography; time zones; timetables; itineraries; fares; ticketing; surface transportation; hotel and tour reservations; travel insurance.
(5 semester periods)
- 468 Principles of Credit Union Management**
History of the credit union movement; organizational structure; delinquency control and collections; operating procedures; interest theory; duties of credit committee; loan policies; credit union organizations.
(5 semester periods)

SUBJECT NO.

- 667.3 Rail Rates 3**
 Diversified rate problems involving shipping in Mountain-Pacific territory; rail accessorial services; routing, federal regulations, and current traffic matters; freight forwarder organization, operation, regulation, and rates. Prerequisites: Rail Rates 1 and 2, or equivalent.
 (5 semester periods)
- 668 Air Cargo Transportation**
 Instruction in all phases of air transportation; joint passenger and freight carriers; domestic rates and regulations; international rates and regulations; terminal procedures; expediting techniques; Civil Aeronautics Act of 1938.
 (5 semester periods)
- 669 Household Carriers**
 Instruction in the use of household carriers; the techniques employed in estimating charges; the proper rates to assess; the relationship between industry and carrier; proper sales approach; the problems confronting both industry and the carrier; the types of articles that can be moved by the carrier.
 (5 semester periods)
- 670 Rate Making and Adjustment Procedure**
 Conference and bureau methods of rate making; Reed-Bulwinkle Bill; shipper's rate proposals; carrier rate proposals; carrier procedures for disposition of dockets; area of reasonableness; features of alleged prejudice and discrimination; rate relationships; effects of competition; rules of rate making.
 (5 semester periods)
- 672 Passenger Travel and Reservation**
 Development of air travel; air geography; time zones; time tables; itineraries; fares; ticketing; surface transportation; hotel and tour reservations; travel insurance.
 (5 semester periods)
- 673 Interstate Commerce Act**
 Interstate Commerce Act and Amendatory Acts; fundamentals of rate making to assist in preparation for practice before the I.C.C.
 Prerequisite: Permission of instructor.
 (5 semester periods)
- 676 I.C.C. Practice and I.C. Law**
 Rules of practice before the Interstate Commerce Commission; rules of evidence; canons of ethics; review of principles; interpretation of interstate commerce laws from federal court cases and I.C.C. decisions; preparation for practice before the I.C.C.
 Prerequisite: Permission of instructor.
 (5 semester periods)
- 679 Foreign Freight Forwarding**
 Steamship bookings; air freight; documentation, consular invoices; export declarations; export licenses.
 (5 semester periods)
- 682 Freight Forwarder Rates**
 History, regulation, and organization of Freight Forwarded Services; construction, application, and use of freight forwarder tariffs through rate problems.
 (5 semester periods)

AUTHORIZED SUBJECTS

BUSINESS EDUCATION

SUBJECT NO.

- 469 Credit Union Management Accounting**
 Credit union operations; account principles; opening accounts; accounting for cash; transacting loans; reconciling the bank account; closing routines; delinquency control.
 (5 semester periods)
- 471 Public Relations Management**
 Ways of identifying the various public groups; selecting the most effective techniques and media for reaching the chosen audience; criteria for building a total program and for planning a specific campaign; methods of evaluating success of projects.
 (5 semester periods)
- 475 Institutional Management**
 Duties and responsibilities of the executive housekeeper in hospitals, hotels, motor hotels, department stores, clubs, churches, and other institutional and industrial establishments.
 (5 semester periods)
- 476 Personnel Management**
 Orientation, fundamentals, and organization of the personnel department; selection and development of employees; employee efficiency and morale; employer-employee relations; wage scales and benefits.
 (5 semester periods)
- 477 Business Psychology**
 Application of principles of psychology to supervision in business and industry; explanations in non-technical language; aspects of human behavior; motivation; habits; instincts; interests; learning processes; emotions; attitudes; personalities.
 (5 semester periods)
- 480 Supervision Fundamentals**
 Employee instruction; employee relations; supervisory and personnel principles; application of principles to specific working situations; handling grievances; improving job methods; introducing change; motivating greater productivity; effects of management policies on employee relations.
 (5 semester periods)
- 482 Supervision Practices**
 Development of effective supervision techniques; preparation of schedules; handling problems; supervision of employees; assignment of employees; efficient use of manpower.
 (5 semester periods)
- 483 Employee Relations**
 Understanding of individual and group behavior; personality factors, attitudes; ways of working together for more efficient and effective job performance.
 (5 semester periods)
- 486 Employee Ins tutions**
 Methods and techniques of instruction to insure better job performance for all levels of supervision; follow-up; retention.
 (5 semester periods)

SUBJECT NO.

- 489 Business Conference Leading**
Finding ways of most effective use of meeting time; building the agenda; choosing and notifying personnel; conducting the meeting; encouraging contribution to discussion; reaching agreement; determining the goals, evaluation, follow-through.
(2½ semester periods)
- 492 Work Simplification**
Principles of job-methods improvement; motion economy; layout for efficient operation; introduction of improvements to employees.
- 495 Production Planning and Controls**
Purpose and objectives of planning and controls; manufacturing costs; planning quality, quantity, and production controls; controlling personnel, organization, and materials.
(5 semester periods)
- 498 Communication for Supervisors**
Principles of clear and effective communications; overcoming verbal barriers; speaking and listening effectively; communicating by telephone; interviewing and counseling; preparing business letters, memos, bulletins, and reports.
(5 semester periods)
- 510-559 MERCHANDISING*
- 511 Principles of Marketing**
Distribution of commodities from the producers or manufacturers through the retailer to the ultimate consumer; classification of commodities and services; functions and channels of the various distributors; planning, buying, and promoting.
(5 semester periods)
- 514 Marketing Practices**
Specifications of successful distribution in individual fields; study of functions in the field; departments within the field; management problems; merchandising plan; individual promotions.
(5 semester periods)
- 517 Current Merchandising Problems**
Current status of the market; regulations affecting the industry; current promotion campaigns; buyer habits and trends.
(5 semester periods)
- 520 Fundamentals of Advertising**
Principles and practices of advertising; purpose of campaigns; copy layout; slogans, trade marks, and media; planning total and individual campaigns.
(5 semester periods)
- 525 Service Station Sales and Management**
Specific problems related to selling at service stations; knowledge of product; customer relations; pump island procedures; service procedures; record keeping; housekeeping; cost control; and opportunities in service station management.
(5 semester periods)

SUBJECT NO.

- 526 Selling Home Furnishings**
 Specific problems related to furniture and home accessory sales; total room planning and individual pieces; room arrangement; fashion trends.
 Prerequisite: Applied Art for Retailing, or permission of instructor.
 (5 semester periods)
- 529 Textile Analysis and Sale**
 Sources and characteristics of man-made and natural fibers; manufacturing and finishing processes; selection, use, care, and fashion trends; application to clothing and interior decoration field.
 (5 semester periods)
- 532 Mathematics of Retailing**
 Fundamentals of arithmetic for sales personnel, including fractions, percentage, discount, interest; computation of sales tax and luxury tax; mark-up and mark-down; use of sales checks, cash registers, time clocks.
 (5 semester periods)
- 535 Retail Cashiering and Grocery Checking**
 Development of skills in using cash register, rapid and accurate scaling, grocery arithmetic, check-stand procedures; customer relations, appearance, and personal grooming; check and money handling; produce identification; security.
 (15 semester periods)
- 538 Retail Produce Practices**
 Buying; receiving and handling produce; building displays; care of produce to reduce spoilage; pricing; trimming and pre-packaging; advertising; department management.
 (5 semester periods)
- 539 Commercial Floristry Design**
 Basic principles of floral design and care of cut flowers; practical shop work in designing of corsages, commercial floral displays, and funeral tributes; basic principles of shop management.
 (10 semester periods)
- 541 Fundamentals of Selling**
 Selling process in the wholesale and specialty fields; developing sales plans; security prospects; development of sales personality and techniques of successful selling through practice in sales presentations; product analysis; customer relations; closing the sale; follow-up service.
 (5 semester periods)
- 542 Advanced Selling**
 Effective selling techniques; use of motivation; emphasis on responsibilities in human relations; discussion of case problems; perfecting sales talks; analysis of sales plans; introduction to sales management.
 (5 semester periods)
- 544 Salesmanship Practices**
 Development of effective selling techniques; critical analysis of various parts of sales; review of latest methods in selling, including use of visual aids and role-playing; securing prospects; developing more and larger sales to present customers; customer service and follow-up.
 Prerequisite: Fundamentals of Salesmanship or selling experience.
 (5 semester periods)

BUSINESS EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

547 Sales Speech
Development of effective sales presentations; improvement in speaking ability, self confidence, appearance; oral sales presentations; evaluation and analysis of organization, logic, voice, emotional effect.
(5 semester periods)

550 Sales Psychology
Review of principles of salesmanship; methods of conquering fears of salesmen; study of motivations and why customers buy; techniques used in changing customer attitude; creating a desire to buy; after-sale procedures.
(5 semester periods)

553 Sales Institute
Brief course, consisting of several meetings; effective selling techniques; emphasis on current market conditions; guest speakers and a panel discussion.

560-589 REAL ESTATE

561 Real Estate Principles
Types of property; policies of urban and suburban development; agricultural land usage; subdividing; major influences affecting city growth trends; functions of private and governmental agencies; terminology.
(5 semester periods)

564 Real Estate Law
Major aspects of the laws of real property, including the organization and function of the State Division of Real Estate; contracts, deeds, titles, liens and encumbrances, escrows, leases, zoning, financing, land descriptions; brokerage; preparation for California state license to sell real estate.
(5 semester periods)

565 Real Property Descriptions
Legal descriptions of property; types of descriptions, terminology, controlling principles, applications, practical exercises used to develop understanding of and ability to write property descriptions.
(5 semester periods)

567.1 Real Estate Appraisal 1
Purposes and functions of residential appraisals; the nature of property and its value; value and price change; neighborhood analysis; city growth; depreciation; appraisal techniques, appraisal reports.
(5 semester periods)

567.2 Real Estate Appraisal 2
Analysis of income properties; profit and loss statements; present worth tables; capitalization rates; methods of capitalization; leasehold interest; subdivisions effect of financing appraisal.
Prerequisite: Real Estate Appraisal 1, or permission of instructor.
(5 semester periods)

570 Real Estate Sales
Development of effective selling techniques; review of latest selling methods; securing prospects and listings; customer service and follow-up.
(5 semester periods)

AUTHORIZED SUBJECTS

BUSINESS EDUCATION

SUBJECT NO.

- 573 Real Estate Finance**
Capitalization of income, interest, and new yield; types of loans, loaning agencies; insurance coverage; legal provisions of loans; repayment clauses.
(5 semester periods)
- 576 Real Estate Practices**
Establishing the real estate office, securing listings and prospects; showing properties and closing sales; improving property through building, construction, and landscaping.
(5 semester periods)
- 579 Property Management**
Management of income property; methods used in renting; maintenance and upkeep, reduction of overhead, purchasing techniques; analyzing investments; leases; liabilities; legal aspects, including building and sanitation, baggage liens, insurance, workmen's compensation.
Prerequisites: Real Estate Law and Real Estate Finance, or permission of instructor.
(5 semester periods)
- 582 Apartment House Law and Management**
Laws, rules, and regulations governing multiple family dwellings, apartment houses, hotels, bungalow courts; includes leasing, notices, eviction, maintenance, decorating, baggage liens, liability of landlords, labor laws, and general management of real property.
(5 semester periods)
- 585 Escrow Practices**
Classification of property; types of deeds and transfers of titles; title insurance; usual methods used in opening the transaction, developing the file, closing procedures, handling bulk sales, cancelling escrows.
(5 semester periods)
- 587 Condominiums**
Comparison with other forms of multi-family residence ownership; deals with state regulatory agencies; the declaration; the owners' association; compliance with the Subdivision Map Act; commercial and leasehold condominiums; the future condominiums.
(5 semester periods)
- 588 Real Estate Investments**
Introduction to analysis of various types of income properties for investment purposes; locations, income, operating expenses, depreciation, and the computation of actual net income; includes retail stores, shopping centers, motels, hotels, lofts, apartment houses, other units; mortgage investments; land investments.
(5 semester periods)
- 589 Building Residential or Income Property**
Organization and development of plans for a building project; designed to provide both laymen and those persons engaged in the construction with understanding of site selection; drawing plans and specifications; financing; selecting a contractor; negotiating a contract; supervising construction; landscaping.
(5 semester periods)

SUBJECT NO.

590-659 SECRETARIAL SCIENCE

591.1 Shorthand Theory 1

Basic principles and theory of Gregg Shorthand Diamond Jubilee; development of basic skills and techniques in shorthand reading and writing.

(5 semester periods)

591.2 Shorthand Theory 2

Continuation of principles and theory of Gregg Shorthand Diamond Jubilee; development of basic skills and techniques; dictation of practiced, as well as supplementary graded, material.

Prerequisite: Shorthand Theory 1, or equivalent.

(5 semester periods)

591.3 Shorthand Theory 3

Review and mastery of principles and theory of Gregg Shorthand Diamond Jubilee; short cuts; dictation and transcription; techniques used to increase speed and improve skills to meet business standards of proficiency.

Prerequisite: Shorthand Theory 2, or equivalent.

(5 semester periods)

593 Shorthand Theory Review

Review of theory and principles of Gregg Shorthand; speed development skills and techniques.

Prerequisite: Knowledge of Gregg Shorthand.

(5 semester periods)

595.1 Shorthand Dictation 1

Speed-building techniques and development of skills; general and business dictation material; dictation from 60 to 80 words per minute; transcription.

Prerequisite: Shorthand Theory 3, or equivalent, and Typewriting.

(5 semester periods)

595.2 Shorthand Dictation 2

Speed-building techniques and development of skills; general business and specialized dictation; dictation from 80 to 100 words per minute; transcription.

Prerequisites: Shorthand Dictation 1, or equivalent, and Typewriting.

(5 semester periods)

595.3 Shorthand Dictation 3

Advanced speed-building techniques and skill development; office-style dictation from 100 to 120 words per minute; transcription.

Prerequisites: Shorthand Dictation 2, or equivalent, and Typewriting.

(5 semester periods)

595.4 Shorthand Dictation 4

Intensive, advanced speed-building techniques and skill development; specialized and sustained dictation; dictation speed from 120 to 140 words per minute; transcription.

Prerequisites: Typewriting and Shorthand Dictation 3, or equivalent.

(5 semester periods)

AUTHORIZED SUBJECTS**BUSINESS EDUCATION****SUBJECT NO.**

- 597.1 Legal Dictation 1**
Definition, derivation, and explanation of legal terms and phrases; legal vocabulary with shorthand outlines; dictation of legal material; legal forms and documents.
Prerequisites: Typewriting and speed of 100 words per minute in shorthand.
(5 semester periods)
- 597.2 Legal Dictation 2**
Advanced definition, derivation, and explanation of legal terms and phrases; legal vocabulary with shorthand outlines; advanced legal dictation; legal forms and documents.
Prerequisites: Typewriting and Legal Dictation 1, or equivalent.
(5 semester periods)
- 600.1 Court Reporting 1**
Court reporting principles and techniques; development of skill in taking rapid and sustained dictation; practice in taking two-voiced, four-voiced, and other specialized dictation; preparation for Official Court and C.S.R. (Certified Shorthand Reporter) Examinations.
Prerequisites: Typewriting and speed of 120 words per minute in shorthand.
(5 semester periods)
- 600.2 Court Reporting 2**
Advanced court reporting principles and techniques; intensive practice for speed development; application of principles and skills to actual reporting situations; preparation for Official Court and C.S.R. (Certified Shorthand Reporter) Examinations.
Prerequisite: Court Reporting 1, or equivalent.
(5 semester periods)
- 603 Medical Dictation**
Definition, derivation, and explanation of medical terms and phrases; medical vocabulary with shorthand outlines; dictation of medical materials, medical office forms.
Prerequisites: Shorthand 1 and Typewriting.
(5 semester periods)
- 609.1 Stenotype Theory 1**
Fundamental theory and principles of Stenotype-machine shorthand; development of basic skills and techniques in operating machine.
(5 semester periods)
- 609.2 Stenotype Theory 2**
Continuation of principles and theory of Stenotype-machine shorthand; further development of basic skills and techniques; dictation and speed building.
Prerequisite: Stenotype 1, or equivalent.
(5 semester periods)
- 609.3 Stenotype Theory 3**
Review and mastery of principles of theory of Stenotype-machine shorthand; speed building and development; dictation, transcription.
Prerequisite: Stenotype 2 and Typewriting, or equivalent.
(5 semester periods)

BUSINESS EDUCATION**AUTHORIZED SUBJECTS****SUBJECT NO.**

- 612.1 Stenotype Dictation 1**
Speed-building techniques and skills; general and business dictation material; 60 to 80 words per minute.
Prerequisites: Stenotype 3 and Typewriting, or equivalent.
(5 semester periods)
- 612.2 Stenotype Dictation 2**
Speed-building techniques and skills; general, business, and special dictation material; 80 to 100 words per minute; transcription.
Prerequisite: Stenotype Dictation 1, or equivalent.
(5 semester periods)
- 612.3 Stenotype Dictation 3**
Advanced speed-building techniques and skill development; transcription practice; repetitive and new material; dictation speed from 100 to 120 words per minute.
Prerequisite: Stenotype Dictation 2, or equivalent.
(5 semester periods)
- 615 Stenotype Theory Review**
Review of theory and principles of machine shorthand; special emphasis upon abbreviations and techniques in the operation of the machine.
Prerequisites: Experience in machine shorthand.
(5 semester periods)
- 616 Stenoscript**
Basic principles and theory of Stenoscript ABC shorthand; development of basic skills and techniques in use of an alphabetic shorthand.
(5 semester periods)
- 618.1 Typewriting 1**
Keyboard; machine parts; typewriting techniques; fundamental skills; timed writing; minimum speed of 25 words per minute.
(5 semester periods)
- 618.2 Typewriting 2**
Review of basic techniques and skills; development of speed and accuracy; personal use typewriting; timed writing; minimum speed of 30 words per minute.
Prerequisite: Typewriting 1, or equivalent.
(5 semester periods)
- 618.3 Typewriting 3**
Review of basic techniques and skills; accuracy and speed development; business letters and forms; timed writing; minimum speed of 30 words per minute.
Prerequisite: Typewriting 2, or equivalent.
(5 semester periods)
- 618.4 Typewriting 4**
Review and practice of techniques and skills; specialized business forms; emphasis on speed and accuracy in production work; speed building; timed writing; minimum speed of 50 words per minute.
Prerequisite: Typewriting 3, or equivalent.
(5 semester periods)

AUTHORIZED SUBJECTS**BUSINESS EDUCATION****SUBJECT NO.**

- 618.5 Typewriting 5**
Application of typewriting techniques and skills to meet business standards; legal and statistical typing; duplicating processes; transcribing machines.
Prerequisite: Typewriting 4, or equivalent.
(5 semester periods)
- 621 Filing**
Fundamentals of alphabetic, Variadex, Triple Automatic, Soundex, and numeric systems of filing; related systems.
(5 semester periods)
- 624 Office Practices and Procedures**
Office organization and routines; office procedures; telephone usage; handling the mail; filing; duplicating processes; transcribing machines; occupational information; techniques for securing employment.
(5 semester periods)
- 625 Office Practices and Procedures (DMV-Clerk)**
Introduction to office organization and routines in an automobile dealership; office procedures; registration requirements; DMV regulations; transfer of ownership; filing; handling the mail.
(5 semester periods)
- 627 Legal Procedures for Secretaries**
California procedural law and forms; preparation of court forms, pleadings, and documents; definition and explanation of legal proceedings and procedures.
(5 semester periods)
- 630 Insurance Office Procedures**
General insurance office practices and procedures; insurance terminology; insurance records; public relations; correspondence and reports; clerical problems in the insurance profession.
(5 semester periods)
- 633 Medical Laboratory Procedures**
Use and care of microscope, centrifuge, and other scientific equipment; methods of sterilization of instruments; theory and demonstration of tests as performed in doctors' offices.
(5 semester periods)
- 636 Medical Office Procedures**
Medical office practices and procedures; doctors' abbreviations, symbols, diagnostic procedures; medical records; public relations; correspondence and reports; assisting the doctor; clerical problems in the medical profession.
(5 semester periods)
- 639 Medical Terminology**
Facts of general structure; function of different body organs and systems; medical terms related to these organs and to the more common diseases, including surgery; how to analyze medical terms; doctors' abbreviations and symbols; spelling, pronunciation and understanding of medical and surgical terms.
(10 semester periods)

BUSINESS EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

642 Secretarial Procedures
Secretarial skills; secretarial accounting; general office procedures; business law; human relations; economics; office management; review as preparation for CPS examination.
(5 semester periods)

645 PBX Switchboard Operation
Fundamentals of PBX switchboard operation; practice in operation of a small switchboard; telephone courtesy; incoming and outgoing calls; taking messages; duties of receptionist.
(5 semester periods)

660-699 TRANSPORTATION AND TRAFFIC MANAGEMENT

661 Principles of Traffic Management
Survey of all phases of traffic management; organization and function of industrial-traffic departments; shipping, receiving, warehousing, claims, choice of carriers, accessorial services; terminology; governmental regulations; procedures in making freight rates and publication of tariffs.
(5 semester periods)

662 Terminal Operations
Terminal operations; systems and procedures; cost and production standards; material handling; claims and overshoot and damage procedures; service; supervising qualifications; employee-supervisor relations.
(5 semester periods)

664.1 Motor Rates 1
Use of freight classifications and tariffs of the California Public Utilities Commission and California Motor Carriers through rate problems involving application of rules and regulations.
Prerequisite: Traffic Management, or equivalent.
(5 semester periods)

664.2 Motor Rates 2
Diversified rate problems involving motor carriers, Rocky Mountain Motor Tariffs Bureau freight rate tariffs, federal regulations, and current traffic matters.
Prerequisites: Motor Rates 1, Rail Rates 1 and 2, or equivalent.
(5 semester periods)

667.1 Rail Rates 1
Use of freight classification and California rail freight tariffs through practical rate problems involving all phases of rating; state and federal regulations.
Prerequisites: Traffic Management and Motor Rates 1, or equivalent.
(5 semester periods)

667.2 Rail Rates 2
Diversified rate problems involving rail transcontinental freight rate tariffs; construction of combination rates, federal regulations, and current traffic matters.
Prerequisite: Rail Rates 1, or equivalent.
(5 semester periods)

BUSINESS EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 683** **Freight Claims**
Liability of freight claims; damage claims; carriers' claims; laws affecting freight loss and damage by railroads, motor trucks, air and water carriers, and railway and air express.
(5 semester periods)
- 685** **International Trade**
Interchange of goods between countries; duties; customs regulations; monetary values; consular invoices; letters of credit; insurance for foreign shipments; steamship and airline bookings; ocean bills of lading; airbills.
(5 semester periods)
- 688** **Regulation of Transportation**
Federal laws applicable to domestic land and water carriers; designed for both shippers and carriers.
(5 semester periods)
- 691** **Interstate Commerce Law and Practice**
Leading court decisions, practices, and procedures before government agencies, and the effect and purpose of federal regulation of transportation; assistance in preparation for the Interstate Commerce Commission Practitioner's examination; regulatory laws for both carrier and shipper.
(5 semester periods)
- 692** **Labor Relations in Transportation**
Economics of the labor market; collective bargaining; grievance procedures; arbitration; case work application.
(5 semester periods)
- 694** **Transportation Economics**
Organization, services, operation, practices, and regulation of transportation enterprises; preparation for the examinations of the American Society of Traffic and Transportation.
(5 semester periods)
- 697** **Transportation Sales**
Development of effective selling techniques in the transportation business; the selling profession; qualifications of a freight salesman; sales methods for use in calling on potential shippers; organization, demonstration, and follow-up in selling.
(5 semester periods)
- 698** **Transportation Purchasing**
Basic instruction in all phases of traffic useful to purchasing personnel; FOB; choice of carriers; pull cars; stop-off cars; split delivery; transit time.
(5 semester periods)

SUBJECT NO.

- 713 Personal Traffic Safety**
Proper care and operation of the automobile; duties and responsibilities of the driver, with emphasis on the following: laws of motion; review of the California Motor Vehicle Code; causes and effects of automobile accidents; development of understanding of and respect for the role of the traffic officer; stimulation of interest in improvement of driving attitudes and habits.
- 715 Commercial Driving**
The traffic problem; laws pertaining to driving; responsibility to public, employer, and self; care and maintenance of equipment; general safety rules.
(5 semester periods)
- 717 Truck Driving and Safety**
Fundamentals of truck operation; driving habits, skills, and attitudes; behind-the-wheel instruction; safety.
- 718 School Bus Driver Training and Safety Education**
Driving skills, laws and rules, mechanical aspects, pupil discipline, public relations, radio operation, and first aid, as related to school bus driving.
(2½ semester periods)
- 720-729 FIRE SCIENCE*
- 721 Fire Chemistry**
Fundamentals of chemistry pertaining to fire fighting; fire hazards; fire prevention, extinguishing methods; safety practices.
(5 semester periods)
- 723 Fire Company Administration**
Practical application of records, reports, and company training; the history and authority of the fire company; the municipal fire problem; distribution and routine maintenance of fire department buildings and equipment; fire alarm systems and communications procedures; distribution of personnel; the principles and methods used in supervising, training, and instructing fire department personnel; water supply for the fire service, including the principles of hydrant distribution; the development of safe driving and working practices, and the role of the supervisor in administering a safety program; modern fire-fighting practices and techniques; pre-fire planning and post-fire training; work organization; discipline and morale.
(10 semester periods)
- 725 Fire Science**
Los Angeles City fire prevention code and regulations pertaining to fire prevention; standards of operation involving public safety; fundamentals of fire suppression.
(10 semester periods)
- 726 Fire Science – Hydraulics**
Review of basic mathematics; hydraulic laws; formulas as applied to the fire service; application of formulas and mental calculations to hydraulic problems; water supply problems; N.B.F.U. requirements for pumpers.
(5 semester periods)
- 727 Fire-Fighting Techniques**
Modern fire-fighting practices and procedures; application of scientific principles to fire suppression; special emphasis on pre-fire planning; development and use of command tactics; analysis of fire by occupancy type.
(10 semester periods)

AUTHORIZED SUBJECTS

CIVIC EDUCATION

SUBJECT NO.

730-734 LEADERSHIP TRAINING

- 731 Leadership Training**
Characteristics of leadership; leadership techniques as applied to group activities; study of human behavior; mass psychology; practice in public speaking; parliamentary procedure.
(5 semester periods)
- 732 Hunter Safety Instructor Training**
Instruction and training for junior hunter safety program; general safety; care and use of firearms.
(2½ semester periods)

735-759 POLICE SCIENCE

- 735 Introduction to Law Enforcement**
Introduction to police science. A basic course dealing with criminal processes and procedures; police history; organization of local, state, and federal police agencies; community composition; structure of modern police departments; framework for handling problems of juvenile delinquency; traffic control; functions of detectives and patrols; review of occupational opportunities and career requirements.
(5 semester periods)
- 736 General Police Information**
Intensive study of all Los Angeles Police Department manuals; training bulletins, orders, procedures, and functions; operations of federal, state, county, and city governments in reference to law enforcement.
(5 semester periods)
- 738 Police Administration and Supervision**
Structure of a modern police department; application of administrative methods in the fields of supervision, planning, organization, direction, coordination, reporting, budgeting, personnel, training, juvenile, patrol, and records; the penal code and general laws of California, including the latest decisions of the California courts, applicable to police work.
(10 semester periods)
- 740 Police Report Writing**
Techniques of presenting information; analysis of Manual of Reports; essential elements of specific reports; distribution of reports.
(5 semester periods)
- 742 Police Law and Evidence**
Penal code, general laws, California Vehicle Code; latest court decisions applicable to police work; rules of evidence and admission of evidence as used in the California courts.
(5 semester periods)
- 744 Police Science – Vehicle Code**
Development and organization of the California Vehicle Code; elements of specific sections; interpretation of statutes; rights and duties of peace officers under the code; related laws from other codes.
(5 semester periods)

CIVIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 746** **Police Science – Enforcement Practices**
Instruction and training for line officers at the functional level; small arms; short wave radio; dispatching procedures; first aid and safety; criminal law; court procedures and reporting procedures.
(5 semester periods)
- 748** **Police Science – Investigation**
Instruction and training for investigators at the functional level; review of police law, courtroom practices, codes, records and reporting procedures.
(5 semester periods)
- 750** **Police Science – Home and Plant Protection**
Care and use of firearms; legal aspects; training of watchmen and security guards.
(5 semester periods)
- 752** **Criminal Process and Procedure**
Criminal law; procedural statutes; rules applicable to court proceedings.
(5 semester periods)
- 753** **Civil Process and Procedural Law**
The courts of California, with special reference to trial court procedures and processes; processes and procedures observed by clerks in civil departments of courts, including papers to be filed, processes to be issued, and related subjects.
(5 semester periods)
- 754** **Police Science – Penal Code**
Organization and content of the penal code and general laws of the State of California; capacity, intent, attempts, and laws of arrest; leading decisions of California courts on penal statutes, plus the precedent set and the implication of the cases; essential elements of many crimes, including kidnapping, forgery, perjury, bribery, and abortion violation; licensing provisions; exemptions of the Dangerous Weapon Control Law.
(5 semester periods)
- 756** **Legal Procedures for Juvenile Traffic**
Principles of the due process of law; use of codes and other legal references; rules of evidence; basic principles of criminal law; effect of juvenile-court law hearings; training traffic in the methods, techniques, and legal procedures used in conducting a court trial.
(2½ semester periods)

760-769 CIVIC EDUCATION – GENERAL

- 761** **City Government**
Structure and functions of city government in relationship to county and state government; city charter; municipal code; political evaluations of city government in Los Angeles.
(2½ semester periods)
- 764** **County Government**
Structure and functions of county government in relation to city and state government; legal basis; levels of government; policy determination; general functions.
(2½ semester periods)

AUTHORIZED SUBJECTS

CIVIC EDUCATION

SUBJECT NO.

- 765 Basic Animal Control**
Laws governing care, control, licensing and impounding of animals; ordinances affecting Department of Animal Regulations.
(5 semester periods)
- 767 Basic Civil Service Information**
Designed to provide students with a better understanding of Civil Service Systems and their operation; the structure, rules, and procedures of the Los Angeles County Civil Service Commission, with emphasis on the practical application of those governing appointments, including promotions, training, performance evaluation, and disciplinary actions.
(2½ semester periods)
- 768 Municipal Civil Service Rules and Procedures**
Review of the rules and procedures of the Los Angeles City Civil Service Commission; emphasis on the practical application and interpretation of the rules and procedures governing appointments, promotions, discharges, layoffs, leaves, service ratings, transfers, and appeals; designed for personnel currently employed by the City of Los Angeles.
(2½ semester periods)
- 770-774 GERONTOLOGY**
- 770 Gerontology**
Topics of particular concern to older adults, including those that relate to mental, physical, and psychological aspects of aging; use of community resources; participation in civic activities.
(5 semester periods)
- 771 Planning for Retirement**
Fundamentals of establishing a constructive life pattern for retirement; problems of economics, health, housing, leisure time.
(2½ semester periods)
- 772 Leadership Training for Older Adults**
Leadership techniques for older adults; attitudes and problems affecting this age group; communication skills.
(5 semester periods)
- 774.1 Understanding the Aged – General Orientation**
Social and personal factors affecting the aging, related to problems of the worker with this age group.
(5 semester periods)
- 774.2 Understanding the Aged – Leisure Time Needs**
Analysis of needs; methods and techniques of broadening programs. Use of community resources.
(5 semester periods)
- 774.3 Management of Homes for the Aging**
Analysis of methods concerning successful management of sheltered-care homes for the aging.
(5 semester periods)

775-799 ELEMENTARY AND CITIZENSHIP EDUCATION

SUBJECT NO.

775-784 ELEMENTARY SUBJECTS

- 775** **Adult Basic Education**
Audio-lingual approach to reduce illiteracy; emphasis on reading, speaking, writing, spelling, and printing; correct usage of English grammar; concept of arithmetic; introduction to social science.
- 776.1** **Elementary Subjects 1**
Introduction to basic skills; reading printed and written words; spelling; practice in correct oral speech habits; cursive writing – capital and small letters and numerical figures; concept of numbers; addition and subtraction.
- 776.2** **Elementary Subjects 2**
Expansion of basic reading vocabulary; basic spelling list; singular and plural in oral and written language; practice in cursive writing; multiplication; history and geography of Los Angeles.
- 776.3** **Elementary Subjects 3**
Mastery of basic primary vocabulary; development of reading speed; capitalization and punctuation; legibility in cursive writing; division; study of city and county government.
- 776.4** **Elementary Subjects 4**
Reading for comprehension, speed, and interpretation; master of basic fourth-grade spelling list; letter forms, sentence recognition, irregular verbs; speed in cursive writing; addition, subtraction, multiplication, and division of common fractions; history and geography of California.
- 776.5** **Elementary Subjects 5**
Review of basic reading skills; practice in reference skills; mastery of basic fifth-grade spelling list; simple sentence recognition; introduction to parts of speech; addition, subtraction, multiplication, and division of decimals; measurements; problem solving; study of state government; maps and simple charts.
- 776.6** **Elementary Subjects 6**
Intensive review and practice of basic reading skills; introduction to use of library; review of basic spelling lists; parts of speech and use of irregular verbs; organization of sentences and paragraphs; mixed numbers – fractions and decimals; percentage; basic geometric forms; history and geography of the United States; maps and charts.
- 776.7** **Elementary Subjects 7**
Development of reading and writing skills; sentence structure, punctuation, and spelling; practice and review of fractions – common decimal; percentage; measurement; problem solving related to practical, everyday experiences; geography and history of the world as related to living in the United States; maps and charts.
- 776.8** **Elementary Subjects 8**
Reading, spelling, grammar, and punctuation; use of library; review of basic spelling lists; letter writing; correct usage and speech habits; mathematics review; federal government; review of history and geography of the United States; review of state and local government.
- 777** **Arithmetic Fundamentals – Elementary**
Application of arithmetic to everyday life; counting and writing numbers; addition, subtraction, multiplication, division of whole numbers, fractions, and decimals; per cent.

SUBJECT NO.

- 778 **Spelling**
Correction of basic spelling errors; word roots, prefixes, suffixes; spelling rules; importance of correct pronunciation and basic spelling lists, including "100 Demons"; use of the dictionary.
- 779 **Remedial Reading**
Practice in improving reading skills and comprehension.
- 782 **English – 8th-Grade Level**
Review of principles of elementary English; extensive practice in oral and written expression.
Prerequisite: Elementary English 6 or 7.
- 783 **English Review and Reading Improvement – Elementary**
Simple sentence construction, parts of speech, paragraphing, capitalizing, punctuation, abbreviations, alphabetizing, outlining, using dictionary, letter-writing, comprehension skills, vocabulary building, location skills, recreational reading.
- 784 **Vocational Rehabilitation – Elementary**
Reading, spelling, grammar, and punctuation; letter writing; correct usage and speech habits; arithmetic; acceptable working habits.

785-789 CITIZENSHIP

- 786 **Citizenship**
Preparation for naturalization; important events in United States History; the Constitution and its historic background; study of the organization, powers, and duties of federal, state, and local governments; understanding and appreciation of our American culture, institutions, and ideals; emphasis on the privileges, duties, and responsibilities of citizenship.
Prerequisite: English As a Second Language 5, or equivalent.

790-799 ENGLISH AS A SECOND LANGUAGE

- 791.1 **English As a Second Language 1**
Speaking, reading, and writing English for the immediate needs of non-English-speaking adults; developing the ability to express themselves, using a present tense, present progressive, simple past, and simple future; learning the elementary structure of affirmative, interrogative, and negative statements. Easy, graded lessons in English based on daily experiences.
- 791.2 **English As a Second Language 2**
Material based on language needs which arise in everyday personal and group experiences; further development of oral skills; new work, consisting of compound statements, correct word order, past progressive verb usage, the comparison of adjectives, and writing informal notes.
Prerequisite: English As a Second Language 1, or equivalent.
- 791.3 **English As a Second Language 3**
Oral and written lessons leading to an understanding of the local community; oral drills on usage; new work based on the use of the perfect tenses; passive voice; the comparative forms of adverbs; complex sentences; writing social and business letters; filling out business forms.
Prerequisite: English As a Second Language 2, or equivalent.

SUBJECT NO.

- 791.4** **English As a Second Language 4**
Constant drill and use of oral skills; new work, including verb agreement, direct and indirect discourse, simple conditional sentences, introducing the use of the gerund and infinitive, compound sentences and questions, and preparation of short compositions.
Prerequisite: English As a Second Language 3, or equivalent.
- 791.5** **English As a Second Language 5**
Review of fundamentals with emphasis on oral skills; new work based on the use of complex verb tenses, sequence of tenses, noun and adjective and adverbial clauses, infinitives, gerunds, and participles; review of business forms.
Prerequisite: English As a Second Language 4, or equivalent.
- 791.6** **English As a Second Language 6**
Development of civic responsibility based on an understanding of the history, growth, and problems of the city, the state, and the nation; use of oral language skills through talks and reports; written work developed to include paragraphing, outline forms and summarizing; drills to increase speed and comprehension in speaking, reading, and writing English.
Prerequisite: English As a Second Language 5, or equivalent.
- 791.7** **English As a Second Language 7**
Over-all review of grammar; continued emphasis on spoken English; training in note-taking, in developing and presenting oral reports, and in composing business and social letters; understanding of American customs and social etiquette; appreciation of United States History and Government.
Prerequisite: English As a Second Language 6, or equivalent.
- 794** **Accent Removal and Speech Improvement**
Foreign accent removal; speech development through English rhythms, correct pronunciation, and fluency.
Prerequisites: English As a Second Language 1-4, or equivalent.

800-834 FINE ARTS AND CRAFTS EDUCATION

SUBJECT NO.

800-804 CRAFTS

801.1 Jewelry 1
 Objects made for decorative wear; construction of jewelry from materials suitable for design and function; shaping, etching, oxidizing, soldering, and polishing metals; gem cutting; enameling and mounting; emphasis on good design, craftsmanship, materials; field trips.
 (10 semester periods)

801.2 Jewelry 2
 Creative use of basic jewelry skills; technical and artistic application of silversmithing and gem developing; emphasis on design, composition, combination of materials, and fine craftsmanship.
 (10 semester periods)

804.1 Lapidary 1
 Grinding, polishing, faceting, and mounting precious, semi-precious, and ornamental stones; recognizing, procuring, and developing a gem, or equivalent.
 (10 semester periods)

804.2 Lapidary 2
 Perfection of basic lapidary skills; classify, mount, and exhibit gems and stones; experiment with and display creative gem ornamentation, showing utility and craftsmanship.
 (10 semester periods)

805-834 FINE ARTS

806 Art Appreciation
 Analysis of the art of significant periods in proper social and historical setting; consideration of the contribution of art to civilization, with emphasis on aesthetic and human values.
 (5 semester periods)

808 Afro-American Art
 Analysis of significant types of Afro-American Art in proper social and historical setting with emphasis on media; development of personal creativeness and possible participation in community projects and exhibitions.
 (5 semester periods)

809 Basic Art and Still Life
 Fundamentals of drawing and painting; depiction of form and space by means of line, dark and light, color, perspective, personal interpretation; concepts and principles of composition; study of techniques; development of personal creative abilities.
 (10 semester periods)

812 Landscape and Marine Painting
 Drawing and painting, using nature, buildings, and boats as subjects; study of types of composition and perspective; use of color; development of personal creativeness and participation in community projects and exhibitions.
 (10 semester periods)

SUBJECT NO.

- 815 Portraiture**
Drawing and painting of figure and head from casts, models, memory, and imagination; study of figure in action; modeling of form and disposition in space; emphasis on form through controlled light; detailed analysis of features of head; study of background and accessories; problems of composition and techniques of portrait painting.
(10 semester periods)
- 818 Contemporary Painting**
Elements of design; line, space, volume; principles of color and their application; training in observation and its translation into picture structure, stressing the individual's creative approach.
(10 semester periods)
- 821 Oil Painting**
Techniques of oil painting on canvas and masonite or other supports; underpainting and glazing; impasto painting; palette knife painting; color theory and phenomena; analysis of compositional approaches; development of the student's personal creativeness; still life; landscapes; portraits.
(10 semester periods)
- 824 Water Color Painting**
Techniques of water color painting; selection and care of equipment; color study and composition exercises; creative painting; still life and landscape in water color; framing and exhibition problems.
(10 semester periods)
- 825 Introduction to Japanese Art**
Fundamentals of Oriental painting and brush techniques; depiction of form and space by means of line, dark and light; personal interpretations, concepts, and principles of composition; development of personal creative abilities.
(5 semester periods)
- 827.1 Ceramics 1**
Design, construction, and decoration of clay forms; building, throwing, casting, modeling, and decorating clays; mixing and applying glazes; loading and drawing the kiln; emphasis on function and quality of design.
(10 semester periods)
- 827.2 Ceramics 2**
Advanced design, construction, and decoration of clay forms; new methods of building, throwing, casting, modeling in a variety of clays; mixing special glazes; emphasis on creativeness in design.
(10 semester periods)
- 827.3 Ceramics 3**
Clay as a creative media; advanced techniques in contemporary ceramic problems; emphasis on individual creative design, color, and texture and application of glazes.
(10 semester periods)
- 828 Bonsai – Trees and Landscapes**
The art of miniature trees and landscapes. The training to develop sculpture in miniature trees.
(5 semester periods)

AUTHORIZED SUBJECTS

FINE ARTS AND CRAFTS EDUCATION

SUBJECT NO.

834

Sculpture

Modeling in clay and forming synthetics in lead; carving with various materials; constructing with metal wire and cement; developing mastery in use of tools appropriate for each material; working with three-dimensional design and composition; finishing and mounting of pieces.

(10 semester periods)

835-884 HEALTH EDUCATION

SUBJECT NO. *835-839 FIRST AID*

- 836^{PI} **Standard First Aid – Red Cross**
Accident prevention; emergency treatment; resuscitation; transportation of injured; home emergencies. Red Cross Certificate issued upon satisfactory completion.
- 837 **Advanced First Aid – Red Cross**
Review of Standard Course; legal aspects; roller bandages; traction splints; practical first aid and problems as related to Civil Defense. Advanced Red Cross Certificate issued upon satisfactory completion.
Prerequisite: Current Standard Red Cross Certificate.
- 839 **Instructor Course First Aid – Red Cross**
Review of first aid; emphasis upon teaching methods; Red Cross Certificate for instructors issued upon satisfactory completion.
Prerequisite: Current Standard Red Cross Certificate.

840-849 PHYSICAL EDUCATION

- 840 **Physical Education – Men**
Physical conditioning and body building; correction of minor postural defects; apparatus and equipment activities; related health problems.
- 842.1 **Physical Education 1 – Women**
Scientific exercises and rhythmic activities; development of coordination, flexibility, rhythm, poise; correction of minor postural defects; apparatus activities; related health problems.
- 842.2 **Physical Education 2 – Women**
Review and continuation of program introduced in Physical Education 1; increase in tempo, intensity, duration, and difficulty of activities; health counseling.

850-854 SWIMMING

- 850.1 **Swimming 1**
Fundamentals of water safety and swimming; relaxation, breath control, buoyancy, stroking, kicking; elementary diving.
- 850.2 **Swimming 2**
Review of Swimming 1; basic strokes; body control; safety techniques; diving.
Prerequisite: Swimming 1, or equivalent.
- 850.3 **Swimming 3**
Review of Swimming 2; advanced swimming skills, endurance, speed; advanced safety and life saving techniques.
Prerequisite: Swimming 2, or equivalent.
- 851 **Life Saving – Senior Red Cross**
Life saving techniques; holds, carrying, resuscitation; water safety techniques; treading, disrobing in water, stroke variations; emergency equipment; transportation. Senior Red Cross Life Saving Certificate issued upon satisfactory completion.

PI See page xxvi.

SUBJECT NO.

852 Life Saving – Instructor Red Cross
 Review of lifesaving and water safety techniques; emphasis upon teaching methods. Instructor's Certificate issued upon satisfactory completion.
 Prerequisite: Current Senior Red Cross Life Saving Certificate.

855-874 NURSING

855 Home Health Aid
 Theory and clinical experience related to the duties and responsibilities of the Home Health Aid in the patient's home; designed to meet personal-care needs resulting from illness or disability.
 (10 semester periods)

856.1 Nursing – Basic Nursing Procedures
 Basic nursing procedures, ethics, medical terminology. Hospital affiliation required, if course is terminal.
 (5 semester periods)

856.2 Nursing – Basic Nursing Theory
 Basic nursing theory; includes knowledge of anatomy and physiology, nutrition and diet therapy, medical terminology, and nursing procedures. Hospital affiliation required, if course is terminal.
 Prerequisite: Nursing – Basic Nursing Procedures.
 (5 semester periods)

856.3 Nursing – Conditions of Illness
 Study of conditions of illness, including topics relating to community health, microbiology, medical and surgical nursing, and advanced nursing procedures. Hospital affiliation required.
 Prerequisites: Nursing – Basic Nursing Procedures and Basic Nursing Theory.
 (5 semester periods)

856.4 Nursing – Maternal and Child Care
 Obstetrical nursing, pediatric nursing pharmacology, advanced nursing procedures, and related topics. Hospital affiliation required.
 Prerequisites: Nursing – Basic Nursing Procedures, Basic Nursing Theory, and Conditions of Illness.
 (5 semester periods)

856.5 Nursing – Hospital Procedures and Practices, Section 1
 A review of nursing procedures involving bedside care of the patient in the hospital, and of supervised clinical practices. Hospital affiliation required.
 Prerequisites: Nursing – Basic Nursing Procedures, Basic Nursing Theory, Conditions of Illness, and Maternal and Child Care.
 (5 semester periods)

856.6 Nursing – Hospital Procedures and Practices, Section 2
 Hospital procedures and practices, including supervised clinical practices and advanced nursing procedures. Hospital affiliation required.
 Prerequisites: Nursing – Basic Nursing Procedures, Basic Nursing Theory, Conditions of Illness, Maternal and Child Care, and Hospital Procedures and Practices, Section 1.
 (5 semester periods)

SUBJECT NO.

- 858 Geriatric Nursing**
Theory of and practice in the care of the geriatric patient; study includes basic nursing care, anatomy and physiology, medical terminology, and training to encourage and aid in developing independence of patient's activity despite his disabilities.
Prerequisite: Nursing – Basic Nursing Procedures.
(5 semester periods)
- 861 Operating Room Technician**
Duties and responsibilities of the operating room technician; specific operative procedures; surgical preparation; post-operative management.
Prerequisite: Practical nursing certificate, LVN license or RN license, or 6 months of hospital experience.
(10 semester periods)
- 862 Dental Assistant**
Routine dental office procedures, including care of dental office and equipment; dental office management; chair assisting; dental anatomy and pathology; anesthesia and oral surgery; bacteriology and sterilization; dental roentgenology; oral hygiene and periodontia; diet and nutrition; orthodontics; pharmacology.
(10 semester periods)
- 864 Physical Therapy Aide**
Philosophy of rehabilitative care and physical therapy; diseases normally treated in the physical therapy department; study of anatomy, physiology, medical terminology, physics, body alignment and theory of exercise; clinical practices to include procedures, massage, exercise, and use of equipment.
(10 semester periods)
- 865 In-service Training for Nursing Personnel**
Review of necessary nursing procedures, medical terminology, new concepts, and methods of patient care.
(5 semester periods)
- 875-884 HEALTH AND HYGIENE*
- 876^{PI} Health and Hygiene**
Problems in personal and community hygiene; human anatomy and physiology; cause and control of diseases; nutrition; sanitation; mental health.
(5 semester periods)
- 878 Basic Public Health Entomology**
Literature, nomenclature, and entomotaxy of insects, including the historical importance of archeological and geological contributions.
(5 semester periods)
- 880 Food Handling and Sanitation**
Bacteria and disease; food service and personal hygiene; preparation, handling, and storage of foods; dishwashing detergents and sanitizers; rodent and insect control; codes, regulations, and inspections.
- 882 Food Management and Sanitation**
Kitchen sanitation; food service and personal hygiene; preparation, handling, and storage of foods; menu planning for nutritious meals in quantity; dishwashing detergents and sanitizers; rodent and insect control; codes, regulations, and inspections.

PI See page xxvi.

885-999 HOMEMAKING EDUCATION

SUBJECT NO.

885-904 CLOTHING CONSTRUCTION

- 886.1 **Clothing Construction 1**
 Selection and use of commercial patterns; fundamental process of garment construction; fitting; elementary design and pattern development; wardrobe planning; grooming; elementary tailoring.
 (10 semester periods)
- 886.2 **Clothing Construction 2**
 Design; construction and use of personal patterns; pattern adjustment and development; fitting; wardrobe planning; grooming; fundamental process of construction and tailoring.
 Prerequisite: Clothing Construction 1, or equivalent.
 (10 semester periods)
- 886.3 **Clothing Construction 3**
 Advanced design and pattern development; using personal patterns; fitting; advanced process of construction; advanced tailoring; grooming; wardrobe coordination.
 (10 semester periods)
- 889 **Clothing Construction – Tailoring**
 Techniques of tailoring; fitting and pressing; design related to tailored garments; use of personal pattern; pattern development; grooming; wardrobe planning.
 Prerequisite: Clothing Construction, or equivalent.
 (10 semester periods)
- 890 **Custom Clothing Design and Pattern Development**
 Fundamentals of flat-pattern development, using basic patterns or slopers; development of designs for a variety of garments, including dresses, suits, coats, blouses, slacks and slips; specific exercises in pattern construction to develop variations of designs in sleeves, collars, skirts, blouses, and area details; encouragement of the application of principles of design and use of creativity.
 (10 semester periods)
- 892 **Clothing Construction – Men’s Tailoring**
 Styling, detailing, construction, and fitting of men’s garments; operation of factory-type power sewing machines.
 (5 semester periods)
- 894 **Children’s Clothing Construction**
 Study of design, fabric and color suitable for children’s clothing. Instruction in fitting; custom and short methods in construction of hand and machine sewing, finishes and trims. Use of commercial patterns and the development of original patterns.
 (5 semester periods)
- 895 **Clothing Construction – Textile Arts**
 Fundamental techniques of construction and care of hand-knitted garments; original-design development and charting; study of yarns, ribbons, and other materials used in the making of such garments.
 (10 semester periods)

HOMEMAKING EDUCATION**AUTHORIZED SUBJECTS****SUBJECT NO.**

- 898** **Clothing – Wardrobe Planning, Selection, and Care**
Basic guides for clothing selection; analysis of figure types and fitting problems; budgeting; evaluation of quality in textiles and workmanship; consideration of color and design for the individual; care of garments; personal grooming.
(5 semester periods)
- 899** **Orientation of Personnel for Occupations and Businesses**
Practical guides for job interview techniques and etiquette; business relationships. Analysis of potentialities for personal improvement, including voice, speech, posture, and comportment; wardrobe inventory and clothing selection; clothing accessories and grooming for appropriate appearance; guidance for alterations, remodeling, and care; consumer information for intelligent spending.
(5 semester periods)
- 900** **Fashion Sketching and Illustration**
History of fashion illustration; study of proportion, mechanical construction of basic fashion figure; basic drawing procedures; basic garment shapes; contemporary styles and techniques; various modes of presentation for vocational training.
(5 semester periods)

905-915 CONSUMER EDUCATION

- 909** **Consumer Education**
Family expenditures related to foods, clothing, shelter, and home furnishings; time and money management.
(10 semester periods)
- 911** **Consumer Education – Home Management**
Food and nutrition; clothing and grooming; health and safety; family finance and time management; housing; family life and relationships.
(10 semester periods)
- 912** **Home Management (Also Housing Authority Contract & EOA-CAP)**
Fundamentals of home management related to homemaking skills and techniques, time and money management, foods and nutrition, meal planning and preparation, clothing construction and remodeling, home safety and sanitation, shelter and home furnishings, hygiene and grooming, and social skills.
(10 semester periods)
- 915** **Home Management and Family Care (Home Makers' Agency)**
Fundamentals of home management and family care; meal planning and preparation; efficient use of time, energy, and money; basic home repairs; home safety; home nursing; infant and child care.

916-925 FOODS

- 918** **Foods 1 – Elementary Preparation and Nutrition**
Basic nutrition; economy of time, energy, and money in food preparation and serving.
(10 semester periods)
- 922** **Foods 3 – Foreign and Domestic Cookery**
Selecting, purchasing, preparing, and serving regional and specialized foods, both domestic and foreign; planning menus for special groups and occasions.
(10 semester periods)

SUBJECT NO.

- 924 **Foods 4 – Catering Methods for Home Use**
 Instruction in planning, preparing, and serving; techniques and skills, using professional methods for gracious presentation and economy of time and cost; basic requirements of shopping, menu planning, recipes, nutrition, food composition, preparation, conservation; serving, lighting and decors.
 (10 semester periods)

926-929 HOMEMAKING, GENERAL

- 926 **Remedial Education – Homemaking**
 Fundamentals of food preparation and service; health; safety; personal hygiene; handsewing and related activities.
 (10 semester periods)
- 928 **Home Nursing**
 Theory and practice of nursing procedure; care of the injured, the sick, the aged, and of invalids; bed baths; nursing techniques used in the home.
 (10 semester periods)

930-949 HOME FURNISHINGS

- 931.1 **Creative Design – Home Accessories**
 Fundamentals of art elements in two- and three-dimensional design as they apply to the development and construction of functional and decorative articles for use in the home; instruction in the use of tools and materials related to mosaic, enameling, leather, textile, paper, wood, stone, and other current media.
 (10 semester periods)
- 931.2 **Creative Stitchery**
 Utilization of a variety of yarns, threads, cords, twines, fibers, braids, and other linear materials, as well as bits of leather, jewelry, beads, shells, buttons, beans, gauze netting, etc.; instruction in the preparation of many kinds of stitches and combinations of stitches worked on background fabric, such as burlap, mesh, linen, denim, twills, or within special controlled areas to produce wall hangings, pictures, cushions, mobiles, room dividers, and other decorator items.
 (10 semester periods)
- 934 **Fabric Accessories for the Home**
 Design and construction of fabric accessories for the home, including draperies, spreads, slip covers; design in relation to the function and placement of the accessories in the home.
 (10 semester periods)
- 937 **Interior Decoration**
 Planning for furnishing and redecorating the home, with emphasis on harmony of color, line and design; selection of wall and floor coverings and selection, use, and placement of furniture and accessories.
 (10 semester periods)
- 940 **Floor Coverings – Hand Made**
 Design and construction of various-size floor coverings; hooked and braided rugs; materials, dyeing, and finishing; study of provincial and conventional design.
 (10 semester periods)

SUBJECT NO.

945 Furniture Refinishing and Home Improvement

A course for homemakers designed to produce professional results; modern method of sanding; applying stain, finishes, white and gold antiquing; gold and silver leafing; refinishing old furniture; removing scratches and dents; including instruction in proper furniture and home care.

(10 semester periods)

*950-954 MILLINERY***951.1 Millinery 1**

Techniques and procedures used in renovating, remodeling, blocking, construction, trimming, and copying; use of felts, straws, and other materials suitable for millinery; design development; pattern- and block-construction; study of millinery in relation to grooming and to wardrobe.

(10 semester periods)

951.2 Millinery 2 – Advanced

Advanced techniques and procedures for renovating, remodeling, blocking, constructing, trimming and copying; use of new materials in relation to contemporary grooming and to wardrobe.

(10 semester periods)

951.3 Millinery 3 – Design

Review of basic techniques and processes; original design and pattern construction; advanced study of millinery in relation to wardrobe.

Prerequisite: Millinery 1 and 2, or equivalent.

(10 semester periods)

*955-999 PARENT AND FAMILY LIFE EDUCATION***955 Preparation for Parenthood**

Cycle of human creation; normal function of pregnancy; exercises for purpose of physical fitness; posture and carriage; standards of obstetrical care; care of the baby.

(5 semester periods)

956 The Pre-school Child

Physical, mental, social, and emotional growth and development; parent-child relationships. Discussion group method.

957.1 Child Observation 1

Pre-school child; growth and development; observation, study and discussion of activities and problems of 2-3 year olds.

(10 semester periods)

957.2 Child Observation 2

Pre-school child; growth and development; observation, study and discussion of activities and problems of 3-4 year olds.

(10 semester periods)

957.3 Child Observation 3

Pre-school child; growth and development; observation, study and discussion of activities and problems of 4-5 year olds.

(10 semester periods)

SUBJECT NO.

- 958 Preparation for Kindergarten**
 Learning patterns of the 4- 5-year old child; parental role in preparation of the child for the formal school experience; demonstration, observation and discussion.
 (10 semester periods)
- 959 The Elementary School Age Child**
 Characteristics of the school age child, parent-child relationships, home-school relations. Discussion -group method.
 (5 semester periods)
- 960 The Junior High Age Child**
 Characteristics of adolescents of junior - high - school age; parent-adolescent relationships; problems of parenthood at this age level; community problems affecting youth. Discussion-group method.
 (5 semester periods)
- 961 The Senior High Age Child**
 Characteristics of adolescents of senior - high - school age; parent-adolescent relationships; problems of parenthood at this age level; community problems affecting youth. Discussion-group method.
 (5 semester periods)
- 963 How The Child Learns**
 School curriculum; the learning process; methods of home study; parent-school relationships.
 (2½ semester periods)
- 964.1 Modern Mathematics (Elementary) for Parents**
 Development and interpretation of the "new mathematics." Introduction to sets; notation and vocabulary; number systems and numeration systems; rational numbers; overview of geometry and measurement.
 (2½ semester periods)
- 964.2 Modern Mathematics (Secondary) for Parents**
 Patterns, concept of number; sets, number line; number operations; factors, multiples, primes; mathematical sentences; geometry; working with sets; systems of numeration.
 (2½ semester periods)
- 965 Parent's Role in Child's Reading**
 Ways in which parents can help their children to read; individual differences and developmental needs; experiences which develop reading ability.
 (2½ semester periods)
- 968 Understanding the Rapid Learner**
 Characteristics of giftedness; school programs for the gifted; parent planning for the rapid learner. Guest speakers, lectures, discussions.
 (5 semester periods)
- 969 The Mentally Retarded Child**
 Problems centering around the retarded child; his place in the family group, information on causes and treatment of mental deficiency.
 (5 semester periods)

HOMEMAKING EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 970 **The Physically Handicapped Child**
Types of physical handicaps; problems facing the child and his parents; education, rehabilitation, and community resources relating to the child.
(5 semester periods)
- 971 **Families With Special Needs**
Child care; health and safety; nutrition; money management; time management; home-school cooperation; use of community resources. (Designed for low-income parents)
(5 semester periods)
- 974 **Modern Marriage and the Family**
Changing family patterns; intra-family relationships; common strengths and conflicts in marriage and parent-child relationships; home management and family finance.
(5 semester periods)
- 975 **Creative Life for Women**
Exploration of women's role and potential; guidance toward individual assessment; education for family crises.
(5 semester periods)
- 976 **The One-Parent Family**
Emotional, social, and financial problems in the one-parent family; individual and community resources for meeting needs.
(5 semester periods)
- 980 **Leadership Training in Human Relations**
Development of leadership for constructive inter-group relations within the community; attitudinal development of individual and family, communication skills, techniques of fostering positive human relations in the community.
(2½ semester periods)
- 981 **Volunteer Leadership**
Characteristics of leadership; leadership techniques as applied to group activities; practice in public speaking, program planning and committee activity.
(2½ semester periods)
- 982 **School Volunteer Training**
Philosophy of the volunteer program; volunteer-child and volunteer-school personnel relationships; development of skills in volunteer duties.
(5 semester periods)
- 985.1 **Introduction to Pre-school Education**
Needs of the pre-school child in nursery schools and day-care homes; plans, methods and materials for programs; teacher relationships.
(5 semester periods)
- 985.2 **Techniques Used in Pre-school Education**
Skills and techniques for nursery schools and day-care homes; program planning, scheduling, administration.
(5 semester periods)

AUTHORIZED SUBJECTS

HOMEMAKING EDUCATION

SUBJECT NO.

- 986** **Child Care Assistant**
Training for non-professional persons wishing to work as assistants in the field of child care; emphasis on observation and practice with pre-school children.
(5 semester periods)
- 987** **Workshop for Foster Parents**
Role of the foster parent in relation to the foster child, placement agency and community.
(5 semester periods)

1000-1599 INDUSTRIAL EDUCATION

SUBJECT NO. *1000-1099 APPRENTICESHIP EDUCATION*

- 1004.1 Auto Mechanics 1 – Appr. (Imported and Domestic Cars)**
Auto mechanic and his trade; basic mathematics; tools of trade; lubrication; frames; suspensions and steering; brakes.
(5 semester periods)
- 1004.2 Auto Mechanics 2 – Appr. (Imported and Domestic Cars)**
Automotive clutches; transmissions; universal joints and final drives; rear axles and differentials; anti-friction bearings; welding.
(5 semester periods)
- 1004.3 Auto Mechanics 3 – Appr. (Imported and Domestic Cars)**
Principles of the internal combustion engine; measuring tools; cylinder heads, oil pans, blocks and crankcases; crankshafts and flywheels; connecting rods; pistons, wristpins, and rings; valves and their operating mechanisms; engine lubrication, engine cooling; diesel engines.
(5 semester periods)
- 1004.4 Auto Mechanics 4 – Appr. (Imported and Domestic Cars)**
Automotive fuel systems, carburetion, electricity, and magnetism; storage batteries; generators and their control; starter motors and their control; lighting systems; ignition systems; accessories; tune-up procedure.
(5 semester periods)
- 1007.1 Barbering 1 – Appr.**
History and appreciation of barbering; instruments and equipment; honing and stropping; shaving; haircut, shampoo, tonic, and massage; hygiene, sanitation, and bacteriology; anatomy and physiology of cells; digestion; circulatory systems and bones of the head.
(5 semester periods)
- 1007.2 Barbering 2 – Appr.**
Muscles of the head, neck, and face; nervous system; skin; electricity; light therapy; cosmetics, their properties and uses; hair, scalp, and skin ailments, diseases; theory of massage; facials; shampoo and scalp treatment; hair coloring; techniques of hairstyling; shop management and barbering ethics.
(5 semester periods)
- 1010.1 Boilermaking 1 – Appr.**
Trade appreciation and history; basic blueprint reading; mathematics; materials; hand and power tools; equipment; shop practices; health and safety.
(5 semester periods)
- 1010.2 Boilermaking 2 – Appr.**
Plane and solid geometry; basic algebra; layout problems and practice; construction principles; drawing and sketching; advanced blueprint reading; code; safety.
(5 semester periods)
- 1010.3 Boilermaking 3 – Appr.**
Basic metallurgy; flame cutting; welding theory; the steam boiler; codes and safety appliances; construction principles; applied mathematics; steam generator.
(5 semester periods)

1000-1599 INDUSTRIAL EDUCATION

SUBJECT NO. *1000-1099 APPRENTICESHIP EDUCATION*

- 1004.1 Auto Mechanics 1 – Appr. (Imported and Domestic Cars)**
Auto mechanic and his trade; basic mathematics; tools of trade; lubrication; frames; suspensions and steering; brakes.
(5 semester periods)
- 1004.2 Auto Mechanics 2 – Appr. (Imported and Domestic Cars)**
Automotive clutches; transmissions; universal joints and final drives; rear axles and differentials; anti-friction bearings; welding.
(5 semester periods)
- 1004.3 Auto Mechanics 3 – Appr. (Imported and Domestic Cars)**
Principles of the internal combustion engine; measuring tools; cylinder heads, oil pans, blocks and crankcases; crankshafts and flywheels; connecting rods; pistons, wristpins, and rings; valves and their operating mechanisms; engine lubrication, engine cooling; diesel engines.
(5 semester periods)
- 1004.4 Auto Mechanics 4 – Appr. (Imported and Domestic Cars)**
Automotive fuel systems, carburetion, electricity, and magnetism; storage batteries; generators and their control; starter motors and their control; lighting systems; ignition systems; accessories; tune-up procedure.
(5 semester periods)
- 1007.1 Barbering 1 – Appr.**
History and appreciation of barbering; instruments and equipment; honing and stropping; shaving; haircut, shampoo, tonic, and massage; hygiene, sanitation, and bacteriology; anatomy and physiology of cells; digestion; circulatory systems and bones of the head.
(5 semester periods)
- 1007.2 Barbering 2 – Appr.**
Muscles of the head, neck, and face; nervous system; skin; electricity; light therapy; cosmetics, their properties and uses; hair, scalp, and skin ailments, diseases; theory of massage; facials; shampoo and scalp treatment; hair coloring; techniques of hairstyling; shop management and barbering ethics.
(5 semester periods)
- 1010.1 Boilermaking 1 – Appr.**
Trade appreciation and history; basic blueprint reading; mathematics; materials; hand and power tools; equipment; shop practices; health and safety.
(5 semester periods)
- 1010.2 Boilermaking 2 – Appr.**
Plane and solid geometry; basic algebra; layout problems and practice; construction principles; drawing and sketching; advanced blueprint reading; code; safety.
(5 semester periods)
- 1010.3 Boilermaking 3 – Appr.**
Basic metallurgy; flame cutting; welding theory; the steam boiler; codes and safety appliances; construction principles; applied mathematics; steam generator.
(5 semester periods)

AUTHORIZED SUBJECTS

INDUSTRIAL EDUCATION

SUBJECT NO.

- 1010.4 Boilermaking 4 – Appr.**
Reaming, riveting, and calking; rigging and erecting; equipment installation and repairing; fitup; burning; cutting and welding; code; safety.
(5 semester periods)
- 1013.1 Cabinetmaking and Millwork 1 – Appr.**
Cabinetmaker and his trade; mathematics; bench work; hand tools; machines; blueprint reading; basic detailing and stock billing; principles of construction and layout; safety.
(5 semester periods)
- 1013.2 Cabinetmaking and Millwork 2 – Appr.**
Shop and theory; basic mathematics; introduction to detailing and stockbilling; power machines and their uses; rod and panel layout; bench and millwork; laminated plastics; safety.
(5 semester periods)
- 1013.3 Cabinetmaking and Millwork 3 – Appr.**
Shop and theory; study of lumber and veneers; adhesives, plastic laminates; cabinets and fixtures; millwork; blueprint reading and layout; safety.
(5 semester periods)
- 1013.4 Cabinetmaking and Millwork 4 – Appr.**
Applied mathematics; layout; drawing; fixtures; millwork; paneling; veneers; abrasives; lacquers, oils, and paints; machine maintenance and adjustments; materials; safety.
(5 semester periods)
- 1013.5 Cabinetmaking and Millwork 5 – Appr.**
Fundamentals of drafting; detailing of simple store fixtures, cases, partitions; principles of stockbilling as it applies to millwork and cabinetmaking trades.
(5 semester periods)
- 1016.1 Carpentry 1 – Appr.**
Basic mathematics; blueprint reading; construction problems; layout of walls, floors, foundations.
(5 semester periods)
- 1016.2 Carpentry 2 – Appr.**
Legal rights and benefits; roof framing and exterior trim; blueprint reading; mathematics; materials; tool practice.
(5 semester periods)
- 1016.3 Carpentry 3 – Appr.**
Employee relations; interior work finish; stair building; mathematics; blueprint reading; tool practice.
(5 semester periods)
- 1016.4 Carpentry 4 – Appr.**
History of cement and concrete; form construction; rough hardware; towers; scaffolds, and rigging; ornamental concrete; heavy timber and log construction; blueprint reading; form detailing; mathematics.
(5 semester periods)

INDUSTRIAL EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 1017.1 Motion Picture Property Craftsmanship 1 – Appr.**
Practical science; safety; hygiene; blueprint reading and layout.
(5 semester periods)
- 1017.2 Motion Picture Property Craftsmanship 2 – Appr.**
Practical science; mechanical sketching; motion picture properties constructed of wood.
(5 semester periods)
- 1017.3 Motion Picture Property Craftsmanship 3 – Appr.**
Plastics used in the motion picture industry; plastics forming fastening methods.
(5 semester periods)
- 1017.4 Motion Picture Property Craftsmanship 4 – Appr.**
Introduction to model making; model construction; sketching; use of materials; construction methods.
(5 semester periods)
- 1017.5 Motion Picture Property Craftsmanship 5 – Appr.**
Motion picture miniature construction; materials and tools used; construction methods.
(5 semester periods)
- 1017.6 Motion Picture Property Craftsmanship 6 – Appr.**
Tools and materials used in motion picture properties; construction of leather properties; ornamental metal.
(5 semester periods)
- 1017.7 Motion Picture Property Craftsmanship 7 – Appr.**
Special effects constructed by property craftsmen; rigging; basic projects in special effects.
(5 semester periods)
- 1017.8 Motion Picture Property Craftsmanship 8 – Appr.**
Basic electricity as applied to motion picture properties; glass cutting and installation.
(5 semester periods)
- 1018.1 Motion Picture Set Designers 1 – Appr.**
History; buildings and materials; drafting standards; selected architectural details; architecture of early Mediterranean Area.
(5 semester periods)
- 1018.2 Motion Picture Set Designers 2 – Appr.**
History; building and materials; camera angles; selected architectural details; perspective drawing; basic theatrical stage design.
(5 semester periods)
- 1018.3 Motion Picture Set Designers 3 – Appr.**
History; buildings and materials; camera angles; selected architectural details; perspective; theatrical stage design; miniatures.
(5 semester periods)

SUBJECT NO.

- 1019.1 Concrete Masonry 1 – Appr.**
 Hand and power tools; equipment; materials, proportions, mixing, testing and working characteristics of concrete; safety and health.
 (5 semester periods)
- 1019.2 Concrete Masonry 2 – Appr.**
 Concrete slabs; colored concrete; laying out and finishing steps; grouting; patching defective concrete areas; sanitary cove and straight bases; expansion and contraction; curing and finishing problems; use of mathematical formulas; safety.
 (5 semester periods)
- 1019.3 Concrete Masonry 3 – Appr.**
 Planning, laying out, pouring, and finishing of curbs, gutters, street walks, and driveways; magnesite floors and steps; blueprint reading and mathematics; specialized jobs; industrial relations; health and safety.
 (5 semester periods)
- 1020.1 Construction Equipment Mechanics 1 – Appr.**
 Basic employment information; safety and first aid; correct use and maintenance of tools; orientation to heavy equipment; basic mathematics; signals; principles of rigging; orientation to component parts of a machine; lubrication; cooling system; air intake system; exhaust system.
 (5 semester periods)
- 1020.2 Construction Equipment Mechanics 2 – Appr.**
 Internal combustion engines; description and construction; engine principles; components; preventive maintenance; safety; fuel systems and carburetion; fuel pump design (diesel and gasoline); preventative maintenance; safety.
 (5 semester periods)
- 1020.3 Construction Equipment Mechanics 3 – Appr.**
 Accessory equipment; automotive electricity ignition systems; clutches and clutch timing; converters; parts, books, and manuals; U-joints and drive lines.
 (5 semester periods)
- 1020.4 Construction Equipment Mechanics 4 – Appr.**
 Transmissions: standard, automatic; rear axles single reduction – two speed; tandem drive; axle shifting systems; final drives; adjustments; lubrication.
 (5 semester periods)
- 1020.5 Construction Equipment Mechanics 5 - Appr.**
 Brakes; hydraulic; electrical; vacuum power; brake boosters; repairs; air brakes; compressor governors; starting motors; valves; tires and wheels; frames; suspensions and undercarriage.
 (5 semester periods)
- 1020.6 Construction Equipment Mechanics 6 – Appr.**
 Principles of hydraulics; liquid flow; valves; pumps; hydraulic systems; electric power; theory of electricity; circuits; magnetism and induction; generation of AC and DC: induction motors; maintenance and safety.
 (5 semester periods)

SUBJECT NO.

- 1020.7 Construction Equipment Mechanics 7 – Appr.**
Welding principles; oxyacetylene; electric arc; soldering. Water pumps: centrifugal; pistons; diaphragms; valves. Compressors: piston type; valve type; screw type; tanks, governors, gauges, preventive maintenance.
(5 semester periods)
- 1020.8 Construction Equipment Mechanics 8 – Appr.**
Orientation to plant equipment; concrete batch plant; asphalt plant; mechanical principles of plant equipment; on-the-job application – plant equipment.
(5 semester periods)
- 1021.1 Construction Equipment Operation 1 – Appr.**
Basic employment information; basic mathematics; safety and first aid; vehicle code and regulations; correct use and maintenance of tools; orientation – construction equipment; service and care of equipment; fuel system and carburetion; exhaust system; electrical system; hydraulic system; tune-up; clutches and frictions; converters; transmissions; universal joints and drive lines; differentials; tires and wheels.
(5 semester periods)
- 1021.2 Construction Equipment Operation 2 – Appr.**
Gear reduction; final drives; steering systems; brakes; wire rope and rigging; signals; grade checking and print reading; principles of welding and cutting; electric power.
(5 semester periods)
- 1021.3 Construction Equipment Operation 3 – Appr.**
Mechanical principles; construction equipment; crawler tractors; rubber-tired tractors; motor scrapers; twin motor scrapers; towed scrapers; motor patrols; crawler cranes; truck crane; parts, books, and manuals; soils and materials.
(5 semester periods)
- 1021.4 Construction Equipment Operation 4 – Appr.**
On-the-job application – construction equipment; excavating equipment; truck and crawler crane; pile driving; trenchers; drills; crawler tractor; skip loader; hydraulic backhoe; motor scraper; tandem scraper; preventive maintenance; schedule checking; minor adjustments; developing check lists.
(5 semester periods)
- 1023.1 Die Sinker – Trimmer 1 (Orientation) Appr.**
Trade orientation, basic blueprint reading, shop theory and practice, safety.
(5 semester periods)
- 1023.2 Die Sinker – Trimmer 2 (Blueprint Reading) Appr.**
Blueprint reading of auxiliary views, intersections and developments, working drawings, and freehand sketching fundamentals.
(5 semester periods)
- 1023.3 Die Sinker – Trimmer 3 (Mathematics) Appr.**
Basic Mathematics: addition, subtraction, multiplication, division, common fractions, decimal fractions, decimal equivalents, percentage, square root, ratio and proportion.
(5 semester periods)

SUBJECT NO.

- 1023.4 Die Sinker – Trimmer 4 (Tools and Equipment) Appr.**
 Hand tools and measuring instruments, lathes, shapers, milling machines, types of dies, forging equipment, shop theory and practice, safety.
 (5 semester periods)
- 1023.5 Die Sinker – Trimmer 5 (Intermediate Mathematics) Appr.**
 Shop algebra and applications, shop geometry and applications, surfaces and volumes, problems and practices.
 (5 semester periods)
- 1024.1 Die Sinking – Impression 1 – Appr.**
 Freehand sketches, construction problems, allowance and tolerances, job descriptions, and shortcuts for layout work.
 (5 semester periods)
- 1024.2 Die Sinking – Impression 2 – Appr.**
 Orientation to design, construction problems, allowance and tolerances in design, forging processes and equipment.
 (5 semester periods)
- 1024.3 Die Sinking – Impression 3 – Appr.**
 Basic function in trigonometry, shop applications, compound angles, surface and solids, calculations, solution of right and oblique angles.
 (5 semester periods)
- 1024.4 Die Sinking – Impression 4 – Appr.**
 Physical properties of metals, steel classification, testing, heat treating, welding.
 (5 semester periods)
- 1024.5 Die Sinking – Impression 5 – Appr.**
 Machines and equipment; milling machines; hydrotels; electric discharge machining; numerical control machining; handbook usage; shop safety.
 (5 semester periods)
- 1025.1 Electrical Fixture Fabricating – Lighting Fixtures 1 – Appr.**
 Scope and safe practices of the trade; job orientation; Underwriters Laboratories specifications; identification and uses of metal and plastics, hand tools, and power machines.
 (5 semester periods)
- 1025.2 Electrical Fixture Fabricating – Lighting Fixtures 2 – Appr.**
 Review of mathematics; linear, angular, circular, area, and volume measurements; drawings; basic and advanced blueprint reading.
 (5 semester periods)
- 1025.3 Electrical Fixture Fabricating – Lighting Fixtures 3 – Appr.**
 Principles and application of rectangular, circular, and multi-piece pattern development and shop layout.
 (5 semester periods)

INDUSTRIAL EDUCATION**AUTHORIZED SUBJECTS****SUBJECT NO.**

- 1025.4** **Electrical Fixture Fabricating – Lighting Fixtures 4 – Appr.**
Rules of parallel line development, radial line development for conical shapes, and rectangular pyramids and tapers.
(5 semester periods)
- 1037.1** **Floor Covering – Resilient and Carpeting 1 – Appr.**
History and appreciation of the floor covering trade; tools and equipment; safety and health; materials.
(5 semester periods)
- 1037.2** **Floor Covering – Resilient and Carpeting 2 – Appr.**
Mathematics; blueprint reading; cove base installation; application of resilient floor tile; basic employment information.
(5 semester periods)
- 1037.3** **Floor Covering - Resilient and Carpeting 3 – Appr.**
Problems of the trade; linoleum laying; sink covering; carpet laying.
(5 semester periods)
- 1043.1** **Household Appliance Servicing 1 – Appr.**
Customer relations; installation and servicing; electricity; mechanical equipment; metals, plastics, glass, and other appliance materials; lubricants; refrigeration; service manual use; safety.
(5 semester periods)
- 1046.1** **Ironworking – Architectural and Ornamental 1 – Appr.**
Orientation; trade appreciation; tools and equipment; principles of ironworking; materials; drawing and layout; mathematics; related science; basic employment information; erection of ornamental ironwork; safety.
(5 semester periods)
- 1046.2** **Ironworking – Architectural and Ornamental 2 – Appr.**
Advanced drawing; rigging and moving; first aid; erection of reinforced iron; blueprint reading; layout and detailing; safety.
(5 semester periods)
- 1046.3** **Ironworking – Architectural and Ornamental 3 – Appr.**
Erection of structural steel, sheeting, and fencing; welding and burning; safety.
(5 semester periods)
- 1049.1** **Ironworking – Reinforcing 1 – Appr.**
Orientation; tools, equipment, and materials; basic drafting and mathematics; basic health, safety, and employment information.
(5 semester periods)
- 1049.2** **Ironworking – Reinforcing 2 – Appr.**
Advanced drawing and blueprint reading; principles and practices of rigging and of erecting reinforcing iron; advanced mathematics and related science; welding; principles and practices of structural and ornamental ironworking.
(5 semester periods)

SUBJECT NO.

- 1052.1 Ironworking – Structural and Ornamental Erectors 1 – Appr.**
 Orientation; basic employment information; basic mathematics and related science; materials, tools, and equipment; elementary blueprint reading; basic processes.
 (5 semester periods)
- 1052.2 Ironworking – Structural and Ornamental Erectors 2 – Appr.**
 Basic employment information; mathematics; materials, tools, and equipment; advanced blueprint reading; rigging and reeving processes.
 (5 semester periods)
- 1052.3 Ironworking – Structural and Ornamental Erectors 3 – Appr.**
 Erection of reinforced iron, including forms, typing, handling, and layout; blueprint reading; welding and burning; erection of ornamental ironwork, sheeting, fences, and service station; safety.
 (5 semester periods)
- 1055.1 Ironworking – Structural and Ornamental Fabricators 1 – Appr.**
 Trade orientation; equipment; materials; basic arithmetic; elementary drawing; safety.
 (5 semester periods)
- 1055.2 Ironworking – Structural and Ornamental Fabricators 2 – Appr.**
 Basic arithmetic; elementary drawing; processes; materials; equipment; human relations; safety.
 (5 semester periods)
- 1055.3 Ironworking – Structural and Ornamental Fabricators 3 – Appr.**
 Logarithms; Smoley's tables; layout and template making; processes; human relations; safety.
 (5 semester periods)
- 1055.4 Ironworking – Structural and Ornamental Fabricators 4 – Appr.**
 Structural trigonometry; layout and template making; human relations; industrial economics; safety.
 (5 semester periods)
- 1060.1 Foundry Molding and Core Making 1 – Appr.**
 Introduction to apprenticeship patterns and core boxes, sand molding and selection of various sand conditioning.
 (5 semester periods)
- 1060.2 Foundry Molding and Core Making 2 – Appr.**
 Principles and theory of cored sand shelves, cored oven, cured cores and molds, foundry quality control; hand tools; risering; elementary metallurgy; metal-melting practices, pouring practices; cleaning equipment and inspection techniques.
 (5 semester periods)
- 1060.3 Foundry Molding and Core Making 3 – Appr.**
 Principles and theory of cover machine molding pattern, draw machines and sand slingers; hyproduce machine; various casting methods; various alloys; blueprint reading and related mathematics.
 (5 semester periods)

SUBJECT NO.

- 1060.4 Foundry Molding and Core Making 4 – Appr.**
Application of induction melting of materials, high-pressure molding procedures, synthetic sand production; jobbing foundry procedures; automated practices and centrifugal casting.
(5 semester periods)
- 1064.1 Meat Cutting 1 – Appr.**
Meat cutter and his trade; basic mathematics; scales and cash registers; identification, selection of meats and meat products; design, upkeep of shop equipment; shop sanitation; safety.
(5 semester periods)
- 1064.2 Meat Cutting 2 – Appr.**
Laws governing production and sale of meat and meat products; breaking and cutting beef, veal, lamb, mutton, pork, poultry, rabbits, fish; display of meats; cooking methodology; advanced salesmanship; market management; cured and smoked meats; industrial relations; safety.
(5 semester periods)
- 1068.1 Office Machine Repair 1 – Appr.**
Knowledge and skills necessary for the proper disassembly, reassembly, repair, and adjustment of manual typewriters.
(5 semester periods)
- 1068.2 Office Machine Repair 2 – Appr.**
Knowledge and skills necessary for the proper disassembly, reassembly, repair, and adjustment of electric typewriters.
(10 semester periods)
- 1068.3 Office Machine Repair 3 – Appr.**
Dismantling, assembling, and adjusting by sections, using parts catalog; finding and correcting minor troubles in the customer's office.
(10 semester periods)
- 1068.4 Office Machine Repair 4 – Appr.**
Knowledge and skills necessary for the proper disassembly, reassembly, repair, and adjustment of the IBM Executive and Selectric models.
(10 semester periods)
- 1073.1 Roofing – Build-up and Composition 1 – Appr.**
Trade history and orientation to the apprenticeship program; applied mathematics; materials and their application; handling materials; basic specifications and codes; hand tools; safety.
(5 semester periods)
- 1073.2 Roofing – Build-up and Composition 2 – Appr.**
Blueprint reading, roofing problems, foundation and slab waterproofing, operation of power equipment; specifications, codes and safety.
(5 semester periods)
- 1073.3 Roofing – Build-up and Composition 3 – Appr.**
The apprentice system; mathematics for the roofer; tools, equipment, and machinery; roofing materials and their application; blueprint reading and specifications.
(5 semester periods)

SUBJECT NO.

- 1076.1 Sheet Metal 1 – Appr**
 Care and use of hand and power tools, instruments, and equipment; materials and sheet metal processing; blueprint reading; mathematics, including basic geometry; layout principles and practices; plastics; health and safety.
 (5 semester periods)
- 1076.2 Sheet Metal 2 – Appr**
 Applying of principles of pattern layout; developing and reading plans, work drawings; designing and detailing; developing patterns for articles, fittings, and projects; air conditioning, heating and ventilating systems; interpreting and using mathematical formulas; safety; federal, state, and local laws affecting the sheet metal worker.
 (5 semester periods)
- 1076.3 Sheet Metal 3 – Appr.**
 Advanced study of plan reading; developments of work drawings, designing, detailing and layout of patterns for kitchens, fountains, and bar equipment; projects and fittings for exhaust, blowpipe, and refuse-collecting systems; plastics; applications of mathematical formulas in fixturing area; volume fire prevention; safety; building codes and ordinances.
 (5 semester periods)
- 1076.4 Sheet Metal 4 – Appr.**
 Specific and more complex phases of planning, detailing, designing, and developing of work drawings and layout of patterns; specialized work, such as on electric signs, marquees, and heating systems; plastics; advanced mathematics; estimations; health and safety.
 (5 semester periods)
- 1079.1 Surveying 1 – Appr.**
 Definition of surveying terms; maintenance of tools and equipment; measurement of horizontal distances; use of leveling rod; field communications; engineering lettering and basic drafting; safety.
 (5 semester periods)
- 1079.2 Surveying 2 – Appr.**
 Trigonometric functions of an acute angle; logarithms; introduction to slide rule; tables of trigonometric functions; interpolation of tables; solution of right triangles; solution of oblique triangles; trigonometry applied to survey problems.
 (5 semester periods)
- 1079.3 Surveying 3 – Appr.**
 Survey accuracy requirements; basic theory of errors; corrections of taped measurements; leveling; survey sights and signals.
 (5 semester periods)
- 1079.4 Surveying 4 – Appr.**
 Angular measurements; circular curves; vertical and spiral curves; referencing survey points; public relations.
 (5 semester periods)
- 1079.5 Surveying 5 – Appr.**
 Traverse surveys; traverse adjustments and area problems; electronics surveys; hydrographic surveys; research for survey data.
 (5 semester periods)

INDUSTRIAL EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 1079.6** **Surveying 6 – Appr.**
Theory of stadia; topographic surveys; photogrammetric surveys; architectural surveys.
(5 semester periods)
- 1079.7** **Surveying 7 – Appr.**
Practical astronomy; construction surveys; property surveys; laws affecting the surveyor.
(5 semester periods)
- 1079.8** **Surveying 8 – Appr.**
United States public land surveys; triangulation and trilateration; techniques of instruction; public relations seminar.
(5 semester periods)
- 1090.1** **Plumbing 1 – Appr.**
Tools and equipment, plumbing fixtures, cast-iron pipe and fittings, safety practices.
(5 semester periods)
- 1090.2** **Plumbing 2 – Appr.**
Installation of finish plumbing, valves, installation of steel pipe, hangers and supports.
(5 semester periods)
- 1090.3** **Plumbing 3 – Appr.**
Basic drawing, orthographic representation, isometric representation.
(5 semester periods)
- 1090.4** **Plumbing 4 – Appr.**
Applied trade mathematics, glass piping, non-metallic piping, plan reading.
(5 semester periods)
- 1090.5** **Plumbing 5 – Appr.**
Principles of operation and installation of waste and vent systems.
(5 semester periods)
- 1090.6** **Plumbing 6 – Appr.**
Principles of sizing of domestic water systems, distribution of hot water, potable water systems, gas supply systems.
(5 semester periods)
- 1090.7** **Plumbing 7 – Appr.**
Principles and operation of oxyacetylene-welding equipment, techniques for making oxyacetylene welds.
(5 semester periods)
- 1090.8** **Plumbing 8 – Appr.**
Plumbing code, additions to plumbing code.
(5 semester periods)
- 1090.9** **Plumbing 9 – Appr.**
Gas controls, plumbing repair, fire protection.
(5 semester periods)
- 1090.10** **Plumbing 10 – Appr.**
Plumbing layout, sizing of gas and water systems, water distribution systems, material take-off.
(5 semester periods)

SUBJECT NO.

1100-1499 TRADE AND TECHNICAL EDUCATION

1100-1124 AERO SPACE

- 1101** **Fundamentals of Inertial Guidance Systems**
 Basic concepts, purpose and method of inertial guidance systems; accelerometers; gyroscopes; and systems components.
(2½ semester periods)

1125-1150 AUTOMOTIVE

- 1126.1** **Auto Mechanics 1**
 Shop and theory; internal combustion engines; fundamentals of maintenance and repair; use and care of hand tools and power equipment.
(5 semester periods)
- 1126.2** **Auto Mechanics 2**
 Shop and theory; overhauling engines, clutches, rear-end and drive assemblies; lubrication.
 Prerequisite: Auto Mechanics 1, or equivalent.
(5 semester periods)
- 1126.3** **Auto Mechanics 3**
 Shop and theory; overhauling generators, distributors, carburetors, fuel pumps, cooling systems, and engines.
 Prerequisites: Auto Mechanics 1, 2, or equivalent.
(5 semester periods)
- 1127** **Automotive Parts Counterman – Wholesaler**
 Counterman procedures and techniques, identification of auto parts, parts catalog reading and pricing, salesmanship.
(5 semester periods)
- 1128** **Tow Truck Operators**
 Towing rules and regulations; trouble diagnosis, including transmission, differential, or rear axle, brakes; customer relations, safety.
(5 semester periods)
- 1129** **Auto Brakes**
 Shop and theory; theory of brakes; types of brakes and operating systems; service and repair of all standard types of brakes.
 Prerequisites: Auto Mechanics 1, 2, or equivalent.
(5 semester periods)
- 1132.1** **Auto Electrics 1**
 Principles of electricity; electrical instruments; ignition systems; equipment used for testing distributors, coils, and ignition systems; electrical circuits; storage batteries.
 Prerequisites: Auto Mechanics 1–3, or equivalent.
(5 semester periods)
- 1132.2** **Auto Electrics 2**
 Shop and theory; starter systems; generators and alternators; generator and alternator controls; lighting system; electric accessories.
 Prerequisites: Auto Mechanics 1–3, or equivalent.
(5 semester periods)

INDUSTRIAL EDUCATION**AUTHORIZED SUBJECTS****SUBJECT NO.**

- 1133 Heavy Duty Brakes**
Advanced study of hydraulic brakes system, electrical brakes system, vacuum power brakes system; air brakes, governors, air starting motors, trailer air brakes; tires, wheels, and steering; vehicle code and regulations.
(5 semester periods)
- 1134 Heavy Duty Electrical and Carburetion Systems**
Truck electrical system, including distributors, storage batteries, starter motors and their controls, alternators, regulators, generators, rectifiers; carburetion and fuel systems, including chokes, air filters, manifolds, and superchargers.
(5 semester periods)
- 1135 Automatic Transmissions**
Shop and theory; disassembling, assembling; adjusting automatic transmissions; overdrive and automatic transmissions.
Prerequisites: Auto Mechanics 1-3, or equivalent.
(5 semester periods)
- 1136 Heavy Duty Transmission Automotive**
Shop theory; disassembling, assembling, and adjusting of heavy duty transmissions.
(5 semester periods)
- 1138.1 Auto Tune-Up 1**
Tune-up procedure; basic engine operation; compression testing; basic engine operation; spark plugs; battery-starter test; ignition system; generator and alternator; regulator; ignition timing.
Prerequisites: Auto Mechanics 1-3, or equivalent.
(5 semester periods)
- 1138.2 Auto Tune-Up 2**
Electrical testing; trouble-shooting; tune-up of automotive ignition and of fuel and carburetion systems.
Prerequisites: Auto Mechanics 1-3, or equivalent.
(5 semester periods)
- 1139 Automotive Upholstery**
Shop and theory; introduction to automotive upholstery sewing techniques; fundamentals of material measuring and fitting; removing and replacing seats and panels; use and care of heat and steam gun, hand and electric staples gun.
(5 semester periods)
- 1141 Power Steering and Power Brakes**
Shop and theory; maintenance and repair; use of testing and special equipment demonstrations of various systems.
Prerequisites: Auto Mechanics 1-3, or equivalent.
(5 semester periods)
- 1142 Automobile Air Conditioning**
Development of an understanding of automobile air-conditioning units and instruction in their installation and servicing; intended for automobile mechanics.
(5 semester periods)

SUBJECT NO.

- 1144.1 Auto Body and Fender Repair 1**
 Shop and theory; rudiments of removing and replacing bent and buckled metal; use of equipment and tools; soldering, welding, grinding, and sanding.
 (5 semester periods)
- 1144.2 Auto Body and Fender Repair 2**
 Shop and theory; replacing and aligning damaged side panels, turret tops, fenders, hoods; lead filling; welding, cutting metals, and spot painting.
 Prerequisites: Auto Body and Fender Repair 1, or equivalent.
 (5 semester periods)
- 1145 Automotive Detailing**
 Shop and theory; washing, polishing, waxing, steam cleaning; painting touchup; interior cleaning; spotting and detailing.
 (5 semester periods)
- 1145.1 Service Station Selling and Service**
 Service station selling and service – specific problems related to selling at service stations; product knowledge; customer relations; pump island procedures; service procedures; record keeping; housekeeping; cost control; and opportunities in service station management.
 (5 semester periods)
- 1146 Diesel Engines**
 Fuel systems, gear trains, cylinder heads, piston and sleeves, crankshaft, cylinder blocks, camshaft, cooling systems, valve train, accessories, and lubrication.
 (5 semester periods)
- 1148 Outboard Motor Repair**
 Internal engine components; external engine components; gearings and drive line; mounting; controls; greasing and lubrication; special and essential measuring; reading and understanding service manuals.
 (5 semester periods)
- 1149 Motorcycle Mechanic**
 Shop and theory; orientation to motorcycle industry; internal combustion engine, assembly and disassembly; electrical system; lubrication system, power transmissions; frame and suspension; wheel and brake; tests and instruments and tune-up.
 (25 semester periods)*
- 1150 Marine Engine Fuel and Electric Systems – Care and Maintenance**
 Shop and theory; principles of engine fuel and electrical systems; checking engine performance, making tests and adjustments.
 (5 semester periods)

1151-1174 BUILDING CONSTRUCTION

- 1151.1 Building Codes 1**
 History of the building changes; permits, occupancies, fire districts, types of construction; exits, fire resistant construction; dwellings; apartment houses, commercial buildings; zoning requirements and other related subject matter of interest to architects, engineers, draftsmen, and contractors.
 (5 semester periods)

*Credits can be earned up to maximum number indicated.

INDUSTRIAL EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 1151.2 Building Codes 2**
Arrangement and use of zoning codes; zone uses; building requirements, exceptions and variances; non conforming buildings and uses; steps in using code.
(5 semester periods)
- 1151.3 Building Codes 3 – Plumbing**
Codes and ordinances required for the installation of plumbing materials and equipment, including definitions; regulations concerning quality and weights of materials; drainage systems, vents and venting, indirect waste piping, wet vented systems, special wastes, traps and interceptors; joints and connections; plumbing fixtures; water distribution; house sewers and private sewer disposal systems; fuel gas piping; water heaters and vents; backflow protection and cross-connections; fire sprinklers and standpipes.
(5 semester periods)
- 1151.4 Building Codes – Zoning**
A review and study of the zoning ordinances, city of Los Angeles; allowable zone uses; lot cuts; required yards; building heights; parking; loading zones; accessory buildings; special exceptions and variances.
(5 semester periods)
- 1153 Pre-Apprenticeship Plumbing**
The plumbing and pipe fitting industry; health and safety on the job; basic trade mathematics; tools and equipment and materials identification; and types of pipe joints.
(5 semester periods)
- 1154.1 Plumbing Code 1**
Plumbing codes and ordinances that affect rough-in and finish work in city and county areas.
(5 semester periods)
- 1154.2 Plumbing Code 2**
Requirements for installation of washes, vents, cleanouts, traps, gas fittings, and water pipes; installation of domestic fixtures, hospital equipment, and industrial equipment.
(5 semester periods)
- 1161 Building Inspection – Welding**
Duties and responsibilities of the building inspector in welding; building code and general practices, plan reading, weld symbols, high-tensile bolts.
(5 semester periods)
- 1162 Building Inspection – Electrical**
Duties and responsibilities of building inspector: Code coverage of electrical installation.
(5 semester periods)
- 1163 Building Construction Estimating – Residential**
Orientation to construction blueprints and estimating terminology; estimating basic lumber and rough hardware; estimating subtrades costs.
(5 semester periods)

SUBJECT NO.

- 1163.1 Building Construction Estimating (Class A and B Construction)**
 Estimating materials for Class A and B structures through the use of checklists; information tables and rules; quantity survey; material listing, such as lumber, rough hardware, concrete; subtrade coordination; concrete form detailing; codes and safety requirements.
 (5 semester periods)
- 1163.2 Contractor License Preparation**
 Orientation to California License Law and Construction Law Manual; federal and state laws pertaining to labor, management, insurance, taxes, housing, safety, payroll; assembling and making bids and contracts; familiarity with necessary forms.
 (5 semester periods)
- 1163.3 Construction Layout**
 Types of instruments; use of builder's transit; measuring accessories, tapes, leveling rod, plumb bob, stakes, stadia; measurements; fieldwork; blueprint reading; building layout; special layouts; basic mathematics.
 (5 semester periods)
- 1168 Paper Hanging**
 Shop and theory; history of the paperhanging trade; selection of wall coverings; estimating; preparation of walls and surfaces; skills of paper hanging; customer relations; safety.
 (5 semester periods)
- 1170.1 Dry Wall Installation 1**
 Theory class; materials and tools; basics of dry wall application; dry walls systems; exterior covering and finishing; safety.
 (5 semester periods)
- 1170.2 Dry Wall Installation 2**
 Theory class; framing; advanced dry wall systems; interior finish; basic welding.
 (5 semester periods)
- 1172 Home Planning and Remodeling**
 Planning and execution of building projects, including foundations, roofs, installation of partitions, elementary lighting, plumbing, and general repair.
 (5 semester periods)

1175-1249 DRAFTING AND DESIGN

- 1176.1 Blueprint Reading 1**
 Fundamentals of blueprint reading, alphabet of lines, orthographic projections, symbols, specifications.
 (5 semester periods)
- 1176.2 Blueprint Reading 2**
 Interpretation of three-view drawings, sections, isometric and oblique drawings; development of plans, elevations and details, sketching; reading of blueprints, both for mechanical and architectural fields.
 Prerequisite: Blueprint reading 1, or equivalent.
 (5 semester periods)

INDUSTRIAL EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 1180.1 Blueprint Reading – Shipbuilding 1**
Reading of types of prints used in the shipbuilding industry; ship nomenclature; plan nomenclature; symbols; abbreviations; types and relationships of drawings; specifications; engineering orders and changes; practical problems; related mathematics.
(5 semester periods)
- 1180.2 Blueprint Reading – Shipbuilding 2**
Orientation to the course, tour of projects at the yard; ship terminology; general arrangement of ships; nomenclature; essentials of blueprint reading; review of basic mathematics; types of materials; and welding symbols.
(5 semester periods)
- 1180.3 Blueprint Reading – Shipbuilding 3**
Purpose of blueprints, line, shape and size description; types of drawings; field trips through ships and lofts.
(5 semester periods)
- 1185.1 Basic Drafting 1**
Basic drafting techniques; tool skills and processes common to all types of drafting work; related information for making plans or sketches; interpretation of non-technical plans and blueprints; introduction to sketching.
(5 semester periods)
- 1185.2 Basic Drafting 2**
Continuation of basic drafting techniques, stressing additional fundamentals that are prerequisite to advanced drafting courses.
(5 semester periods)
- 1188.1 Mechanical Drafting 1**
Orthographic and isometric drawings of machine parts, shop details and sections; orthographic and pictorial drawings of machine parts, shop details, auxiliary projections, screws and threads; geometrical problems and development; mechanical motions; rivets, keys and fastenings; shop detailing.
Prerequisite: Basic Drafting, or equivalent.
(5 semester periods)
- 1188.2 Mechanical Drafting 2**
Shades and shadows; machine design; tool design; mechanical forms; gears; cams; assembly drawings from details; details from assemblies; tolerances; patent drawings; exploded drawings; work geared to field of study needed by the student.
Prerequisite: Mechanical Drafting 1, or equivalent.
(5 semester periods)
- 1190 Electromechanical Drafting**
An advanced drafting course planned particularly for those who have learned basic drafting techniques; consists of a series of graded projects of working drawings as applied to electronic and electro-mechanical phases of engineering; stress placed on professional techniques which are required by industry, and on special symbols, circuitry, printed circuitry, miniaturization, servo-mechanism, and instrumentation.
Prerequisite: Mechanical Drafting, or equivalent.
(5 semester periods)

SUBJECT NO.

- 1191.1 Technical Illustration 1**
 Isometric and orthographic projections; oblique and perspective drawings; freehand sketching and technical drawing of parts and assemblies; translation of mechanical drawings and blueprints to pictorial illustrations; proper tools and materials; processes for reproducing illustrations.
 Prerequisite: Mechanical Drafting, or equivalent.
 (5 semester periods)
- 1191.2 Technical Illustration 2**
 Continuation of basic techniques, stressing additional fundamentals prerequisite to advanced technical illustration courses.
 Prerequisite: Mechanical Drafting, or equivalent.
 (5 semester periods)
- 1192 Airbrush Painting**
 Basic airbrush application with reference to function, use, proper care; techniques in photo retouching; opaque and transparent renderings; use of various materials and mediums to reproduce glass, wood, clouds, and other textures.
 Prerequisite: Technical Illustration, or equivalent.
 (5 semester periods)
- 1194.1 Architectural Drafting 1**
 Floor plans; elevations; details of small and large residences; study of building ordinances and materials; historic styles; sketching, shading, perspective, and simple rendering.
 Prerequisite: Basic Drafting, or equivalent.
 (5 semester periods)
- 1194.2 Architectural Drafting 2**
 Shop and theory; basic information and skills for drawing simple house plans and architectural details; construction required by Los Angeles city building codes.
 Prerequisite: Architectural Drafting 1, or equivalent.
 (5 semester periods)
- 1194.3 Architectural Drafting 3**
 Classification of buildings; graphic status; architectural design, presentation drawings, working drawing for various phases of construction, written specifications based on building codes.
 Prerequisites: Architectural Drafting 1, 2, or equivalent.
 (5 semester periods)
- 1194.4 Architectural Drafting 4**
 Shop and theory; basic information and skills for drawing simple house plans and architectural details; construction as required by Los Angeles city building codes; emphasis on construction detailing, windows and doors, fireplaces and chimneys, stair layouts, cabinets, foundations of two-story dwellings, symbols, new building materials, and heating.
 Prerequisites: Architectural Drafting 1-3, or equivalent.
 (5 semester periods)

SUBJECT NO.

- 1194.5 Architectural Drafting 5**
Shop and theory; house styles, construction, site; plumbing, electrical requirements; sectional drawings; presentation drawings.
Prerequisites: Architectural Drafting 1–4, or equivalent.
(5 semester periods)
- 1195 Civil Engineering Drafting**
Techniques of basic surveying, mapping; contract drawings; cost estimating.
(5 semester periods)
- 1196 Petro-Chemical Pipe Drafting**
Piping materials; refining equipment; instruments; piping and instrument diagrams; isometrics.
(5 semester periods)
- 1197 Sheet Metal Layout and Development – Aircraft**
Principles of aircraft sheet-metal flat pattern layout; theory of bend development; use of projection methods to determine required information; review of basic mathematics through shop trigonometry.
(5 semester periods)
- 1200.1 Sheet Metal Air Conditioning and Pattern Development 1**
Review of principles of layout, orthographic projection, radial line development and triangulation.
(5 semester periods)
- 1200.2 Sheet Metal Air Conditioning and Pattern Development 2**
Introduction to plenums and mixing chambers; the development of patterns for box plenums; construction and layout; construction and development of mixing chambers.
(5 semester periods)
- 1200.3 Sheet Metal Air Conditioning and Pattern Development 3**
Introduction to the development of patterns for round ducts and fittings; offset patterns; mathematical layout formulas for large offset development of fittings; boots of unlike diameters; the development of non-symmetrical tapers, and the use of scale drawings to develop the patterns for tapered lines of extreme length.
Prerequisites: Sheet Metal Air Conditioning Pattern Development 1, 2, or equivalent.
(5 semester periods)
- 1200.4 Sheet Metal Air-Conditioning and Pattern Development 4**
Introduction to industrial exhaust system hoods and canopies; spray booths; restaurant hoods toxic fume exhaust; roof caps and cowls; fire ordinances.
Prerequisites: Sheet Metal Air Conditioning and Pattern Development 1, 3, or equivalent.
(5 semester periods)
- 1203.1 Sheet Metal Detailing 1**
Interpreting plans and specifications in designing and ordering sheet metal products; reading of structural, architectural, electrical, plumbing, and air-conditioning drawings.
(5 semester periods)

SUBJECT NO.

- 1203.2 Sheet Metal Detailing 2**
 Understanding certified drawings; use of slide rule; basic duct design; theory of air flow, fans and fan laws, air distribution; job organization and planning; making field drawings, order and specification sheets.
 Prerequisite: Sheet Metal Detailing 1, or equivalent.
 (5 semester periods)
- 1206.1 Sheet Metal Detailing, Journeyman 1**
 Reading and interpretation of structural, architectural, electrical, plumbing, air conditioning drawings; certified drawings; trade terms; use of slide rule.
 (5 semester periods)
- 1206.2 Sheet Metal Detailing, Journeyman 2**
 Designing of ducts for air conditioning and ventilating systems; theory of air flow, velocity reduction, static regain, and equal friction methods; making of field drawings; order and specification sheets; organizing and placing a job.
 Prerequisites: Sheet Metal Detailing 1, 2, or equivalent.
 (5 semester periods)
- 1215 Tool Design – Basic**
 Review of drafting techniques; dimensions; preliminary layout of drawings, mathematical processes; technical information on types of tools, physical properties of metals, tooling, processes, and materials.
 Prerequisites: Mechanical Drafting 1, 2, or equivalent.
 (5 semester periods)
- 1218 Machine Tool Design**
 Drawing and layout of machines, shafts, bearings, gears, and fasteners; technical information on tools, processes, and materials.
 Prerequisite: Mechanical Drafting 1, 2, or equivalent.
 (5 semester periods)
- 1224.1 Assembly Jigs and Fixture Design 1**
 Drawing and layout of assembly jigs and fixtures; detail of component parts and sequence of tool design.
 Prerequisites: Mechanical Drafting 1, 2, or equivalent.
 (5 semester periods)
- 1224.2 Assembly Jigs and Fixture Design 2**
 Advanced study of technical information on tooling, processes, metallurgy, and materials.
 Prerequisite: Basic Tool Design, or equivalent.
 (5 semester periods)
- 1227.1 Die Design 1**
 Mathematics review, dies for cutting blanks; laying out blanking dies; materials used in diemaking; punch and die details; stops for positioning stock.
 Prerequisites: Mechanical Drafting 1, 2, or equivalent.
 (5 semester periods)
- 1227.2 Die Design 2**
 Dies; sectional, lamination, piercing and perforating, self-grinding, bending and forming. Drawing dies for spherical and oval shapes; rectangular drawing dies; expanding dies; heat-treating of die steels.
 Prerequisites: Dies, Machine Jigs, and Fixture Design 1.
 (5 semester periods)

SUBJECT NO.

1233 **Cadastral and Topographic Mapping**
Fundamentals as practiced and applied by private and public agencies; methods of plotting; traversing; legal descriptions; lettering.

(5 semester periods)

1235 **Basic Principles of Photogrammetry**
Review of current photogrammetric methods as applied to medium and large-scale mapping requirements; flight planning procedures and stereo-plotting techniques; emphasis on the theory and practice of field control layout for the aerial mapping project.

(5 semester periods)

1250-1329 ELECTRICAL AND ELECTRONIC

1251.1 **Basic Electricity 1 – Direct Current Theory**
Introduction to electrical terminology and definitions; laws of electricity and magnetism; instruments and measurements; electro-magnetic induction; the generator and motor; wiring; mathematics and blueprint reading as applied to D.C.

(5 semester periods)

1251.2 **Basic Electricity 2 – Alternating Current Theory**
Characteristics of alternating current; inductance, capacitance; reactance; impedance; power and power factors; laws of series and parallel circuits; principles and characteristics of A.C. machinery and transformers; blueprint reading and mathematics as applied to A.C.
Prerequisite: Basic Electricity 1, Direct Current Theory, or equivalent.

(5 semester periods)

1254.1 **Electrical Wiring Theory 1**
Introduction to electricity, basic tools, equipment and materials; mathematics review; D.C. electricity and apparatus; blueprint reading and specifications; fundamentals of A.C. electricity; specialized tools and equipment.

(5 semester periods)

1254.2 **Electrical Wiring Theory 2**
General, residential, commercial, and industrial wiring methods; lighting; A.C. apparatus; manual and electromagnetic controllers; transformers; basic industrial electronics.
Prerequisites: Electrical Wiring Theory 1, or equivalent.

(5 semester periods)

1255 **Electric Motor Control 1**
Common types and application of manual and electromagnetic motor starters and controllers; diagrams; acceleration and deceleration circuits and equipment.

(5 semester periods)

1257 **Electrical Wiring and Code**
Principles of electrical wiring for light and power, with emphasis upon the national and local codes; wiring systems; electrical systems; methods of installation; motor control devices and power metering and meter testing.

(5 semester periods)

SUBJECT NO.

- 1258 Marine Electricity**
 Marine cables, handling, testing lacing; installation of terminal tubes, stuffing tubes, cable clamps, lugs; layout and installation of equipment and cabling.
 (5 semester periods)
- 1260 Electrical Codes and Ordinances**
 Codes and ordinances required for the installation of electrical materials and equipment by state and local enforcement agencies.
 (5 semester periods)
- 1263 Electrical Estimating**
 Preparation of preliminaries; electrical blueprints and drawings symbols; electrical codes and ordinances; take-off procedures; types of building contracts; change-order procedures.
 (5 semester periods)
- 1266.1 Electrical Power Generation and Distribution 1**
 Planning and developing a power system; voltages; grounding; circuit components, low voltage; codes and related associations; planning expansion.
 (5 semester periods)
- 1266.2 Electrical Power Generation and Distribution 2**
 Short circuits; loads; factors determining loads; high voltage; hazardous locations; emergency systems; trends in industrial wiring.
 (5 semester periods)
- 1266.3 Electrical Power Generation and Distribution 3**
 Rules and regulations for overhead electric line construction and electrical safety orders; observance of requirements of the Public Utilities Commission and Department of Industrial Relations.
 (5 semester periods)
- 1267 Electromechanical Assembly**
 A study of the basic fundamentals of assembly; subassembly production techniques; blueprint reading and schematic drawings; other skills required by the Electronic Production and Manufacturing Industry; theory and practice of planning; use of tools; selection of materials; fabrication and packaging as related to this field.
 (5 semester periods)
- 1269.1 Electronic Production Techniques 1**
 Shop and theory; fundamentals of electronic production; techniques in using hand tools to prepare electronic assemblies; techniques used in production wiring and soldering.
 (5 semester periods)
- 1269.2 Electronic Production Techniques 2**
 Shop and theory; principles and techniques of electronic assembly; wire preparation; insulation and sleeving preparation; component evaluation.
 Prerequisite: Electronic Production Techniques 1, or equivalent.
 (5 semester periods)

SUBJECT NO.

- 1270 Electronics – Inspection**
Analysis of wiring, cable, and schematic diagrams; commercial and military specifications for components, hardware, and material; inspection procedures for mechanical and electrical assemblies.
(5 semester periods)
- 1272 Electronic Fundamentals and Schematics**
Introduction to electrical terminology and definitions; laws of electricity and magnetism; D.C. and A.C. circuit analysis; reading of schematic diagrams; principles of the vacuum tube.
(5 semester periods)
- 1275.1 Electronics – Fundamentals 1 (Direct Current Theory)**
Electron theory; electrostatics; definitions; electromotive force; sources of electrical energy; Ohm's law; conductors; circuits; magnetism; Kirchoff's laws, inductance.
Prerequisites: Electronics Mathematics 1, 2, or qualifying test.
(5 semester periods)
- 1275.2 Electronics – Fundamentals 2 (Alternating Current Theory)**
Sine wave; frequency; values; phase and angle; inductors; capacitors; impedance; power; networks; transformers; time constants; rotary transformers; saturable reactors.
Prerequisites: Electronics Fundamentals 1, Electronics Mathematics 1, 2, or qualifying test.
(5 semester periods)
- 1275.3 Electronics – Fundamentals 3 (Vacuum Tube Application and Amplifier Theory)**
Thermionic emission; primary and secondary emission; diode; triode; linear and non-linear characteristics; tube characteristics; bias control; amplification; transconductance; types of tubes.
Prerequisites: Electronics Fundamentals 1, 2, Electronics Mathematics 1, 2, or qualifying test.
(5 semester periods)
- 1275.4 Electronics – Fundamentals 4 (Vacuum Tube Application and Amplifier Theory)**
Single stage and multi-stage amplification; R-C coupling; transformer coupling; audio and radio frequency amplifiers; hi-fidelity techniques; oscillators; rectifiers.
Prerequisites: Electronics Fundamentals 1–3; Electronics Mathematics 1, 2, or qualifying test.
(5 semester periods)
- 1275.5 Electronics – Fundamentals 5 (Semi-Conductor Devices)**
Semi-conductor materials and physics of their structure; diodes; transistors; types of circuit application; frequency response.
Prerequisites: Electronics Fundamentals 1–4; Electronics Mathematics 1, 2, or qualifying test.
(5 semester periods)
- 1278 Electronic Test Equipment**
Emphasis on theory and use of meters, oscilloscopes, signal generators, oscillators, bridges, tube and transistor checkers; power and frequency measurement devices; meggers; batteries.
(5 semester periods)
- 1279 Electronic Instrumentation**
Various types and kinds of instrumentation available and needed by industry; theory and practice of measuring devices as they apply to commercial and government standards.
(5 semester periods)

SUBJECT NO.

- 1281.1 Electronics – Mathematics 1**
 Fundamental algebraic operations, geometric equations, roots and exponents, logarithms, basic trigonometry; imagery functions; graphs and functions with applications to electronic problems.
 (5 semester periods)
- 1281.2 Electronics – Mathematics 2**
 Quadratic equations, complex numbers, determinants, and introduction to calculus as applied to electronic problems.
 Prerequisite: Electronics Mathematics 1, or equivalent.
 (5 semester periods)
- 1284 Industrial Electronics – Basic**
 Review of electrical theory as applied to electronics; components; electronic tube fundamentals; electric instruments; component testing; tube circuits.
 Prerequisite: Electronic Fundamentals, or equivalent.
 (5 semester periods)
- 1292 Traffic Signal Circuitry**
 Fundamentals of traffic signal controllers; basic circuit and design; principles of operation with relation to traffic; related auxiliary equipment; construction principles and field trouble shooting methods needed to install and maintain traffic signal systems.
 (5 semester periods)
- 1294 Process Instrumentation**
 Instrument identification symbols and letters; pressure instruments; volumetric expansion and pressure-actuated thermometers; electronic temperature measurement; fundamentals of automatic control; liquid level measurement; control and relief valves; flow measurement; instrument specification writing.
 (10 semester periods)
- 1295 Refrigeration Servicing**
 Basic mathematics and algebra, principles of refrigeration, refrigerants, system components, electricity, basic heat transfer, types of insulation.
 (5 semester periods)
- 1296.1 Radio Servicing 1**
 Radio theory; power supply systems; tuned circuits; oscillators; detectors.
 (5 semester periods)
- 1296.2 Radio Servicing 2**
 Amplifiers (audio frequency) servicing procedures; use of test equipment; mathematics; servicing – commercial.
 Prerequisite: Radio Servicing 1, or equivalent.
 (5 semester periods)
- 1299.1 Radio and Television Servicing 1**
 Shop and theory; principles of radio frequencies, amplifiers in FM and TV receivers; work on amplifiers, detectors, rectifiers; repair and testing of television receivers and radio receivers.
 Prerequisite: Radio Servicing, or equivalent.
 (5 semester periods)

INDUSTRIAL EDUCATION**AUTHORIZED SUBJECTS****SUBJECT NO.**

- 1299.2** **Radio and Television Servicing 2**
Shop and theory; I.F. amplifiers and detectors; video amplifiers and D.C. restorer; synchronizing circuits; sweep circuits; power supplies; picture tubes; frequency modulation and television receiver alignment; testing and alignment of special television circuits; projector type receivers; use of special test equipment.
Prerequisite: Radio and Television Servicing 1, or equivalent.
(5 semester periods)
- 1301.1** **FCC Radio Telephone License 1**
Basic Electronics and FCC Rules and Regulations.
(5 semester periods)
- 1301.2** **FCC Radio Telephone License 2**
Electronics and Radio Theory.
Prerequisite: FCC Radio Telephone License 1, or equivalent.
(5 semester periods)
- 1302** **Communications – Telephone**
Fundamentals of installation and maintenance of telephone equipment and switchboard currents; study of Ohm's law, electronic theory, and magnetic law as applied to telephone work.
(5 semester periods)
- 1305** **Communications – Telephone Circuits**
Electric circuits and the electrical transmission of energy; using circuits drawings to install and maintain telephone equipment.
(5 semester periods)
- 1308** **Communications – Telephone Electronics**
Sound and speech transmission, telephone apparatus and circuits, local and toll switching plans, plant records, and principles of plant engineering; review of basic electronic theory as applied to telephone circuits.
(5 semester periods)
- 1309** **Telephone Communications for the Deaf**
Instruction supplementing knowledge of those enrolled to improve job skills; principles of sound and of telephone; standard procedures; courtesy, basic use of hearing indicator; maintenance and care of hearing indicator; use of codes; art of asking questions; special phone calls; practice in use of hearing indicator.
(2½ semester periods)
- 1311** **Transistors**
Introduction to the theory and operation of basic semi-conducting devices, with special emphasis on fundamental ideas and concepts rather than on detailed mathematical treatment; basic semi-conductor physics; types of transistors and their operation; transistors in selected electronic circuits.
(5 semester periods)
- 1313.1** **Introduction to Digital Computers 1**
Fundamental concepts of design, construction, and operation of digital computers; historical background; comparison of analog and digital computing techniques.
(5 semester periods)

SUBJECT NO.

1313.2 Introduction to Digital Computers 2
 Number systems and introductory Boolean algebra; basic programming techniques; detailed investigation of the memory element; input/output device; arithmetic section; and control element.
 Prerequisite: Introduction to Digital Computers 1, or equivalent.

(5 semester periods)

1330-1364 GRAPHIC ARTS

1331.1 Photography 1
 Fundamentals of cameras and photographic equipment; taking, developing, printing, and enlarging pictures; study of optics of the camera, enlarger, lenses; applied chemistry of the development and processing of films and paper.

(5 semester periods)

1331.2 Photography 2
 Taking, developing, and printing of interior and exterior photographs; types of cameras and photographic equipment; darkroom techniques; lighting, shooting, color, light measurements, camera adjustments, focusing, shutter speeds, filters, color pictures.
 Prerequisite: Photography 1, or equivalent.

(5 semester periods)

1334.1 Color Photography 1
 Still and motion pictures in color; principles of still and motion picture cameras for amateur use; lenses; depth of field principle; filters; composition; lighting; editing of interior and exterior subjects; titling; availability of proper materials for still and motion picture color photography.

(5 semester periods)

1334.2 Color Photography 2
 Review of principles and processes of Color Photography 1; special lighting, flood, flash, stroboscopic, color harmony; special lenses; portraits; still life; action shots; landscapes; special effects; close-ups and microscopic photographs; story content, drama, impact, mood; use of sound strip.
 Prerequisite: Color Photography 1, or equivalent.

(5 semester periods)

1337.1 Cinema Photography 1
 Fundamentals of motion picture cameras, films, and equipment; taking motion pictures; making titles.

(5 semester periods)

1337.2 Cinema Photography 2
 Editing; story development; script writing; animation; music background; narration; sound synchronization; special and trick photographic effects.
 Prerequisite: Cinema Photography 1, or equivalent.

(5 semester periods)

1341 Photographic Equipment Repair
 Techniques in and concepts of repair of various types of still and movie cameras, projectors, and photographic equipment.

(5 semester periods)

INDUSTRIAL EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 1343.1 Printing 1 – Composition**
Introduction to shop facilities; employment opportunities; history and background of printing; trade practices; hot- and cold-type composition; safety.
(5 semester periods)
- 1343.2 Printing 2 – Letter Presswork**
Advanced shop practice; letterpress printing; hand- and machine-typesetting; makeup, lockup; platen presswork; automatic small- and large-cylinder presswork; paper-figuring; safety; related phases of the printing industry.
Prerequisite: Printing 1, or equivalent.
(5 semester periods)
- 1346.1 Offset Stripping and Platemaking**
Shop and theory; making and stripping single page, two- and four-page; color work; burning; developing and preserving plates; care of equipment and materials.
(5 semester periods)
- 1346.2 Offset Presswork**
Shop and theory; principles of popular offset and letterpress presses; care, maintenance, and operation of popular letterpress and offset presses; simple bindery operations.
Prerequisite: Offset Lithography 1, or equivalent.
(5 semester periods)
- 1349.1 Commercial Art and Lettering 1**
Advertising lettering; production layout; showcard writing; silk screen processing; package design; poster lettering; sign design and layout; background displays.
(5 semester periods)
- 1349.2 Commercial Art and Lettering 2**
Advanced study of reproduction methods; production of posters, signs, and other art media.
Prerequisite: Commercial Art and Lettering 1, or equivalent.
(5 semester periods)
- 1351 Sign and Show-Card Painting**
Shop and theory; fundamentals of sign painting and lettering; layouts; color display construction; sign construction; introduction to the silk-screen process.
(5 semester periods)
- 1352 Publication Art (From Concept to Printing)**
Skills and tools used in graphic layout of publications; estimating; finished art preparation; copy fitting; photo and printing processes; imposition and presswork; paper and ink; binding and finishing.
(5 semester periods)
- 1355.1 Technical Writing and Editing 1**
Basic techniques required of the technical writer-editor in preparation of material for scientific and industrial publications; review of sentence and paragraph structure; logical organization and development of the technical publication.
(5 semester periods)

SUBJECT NO.

- 1355.2 Technical Writing and Editing 2**
 Advanced techniques of editing; preparation of copy and art; selection of lithographic and other reproduction methods.
 Prerequisite: Adequate preparation in grammar and English usage.
 (5 semester periods)
- 1359 Catalog Parts Compiling**
 Techniques used in development of parts catalogs for both commercial and military publications industry; fundamentals of parts listing, indenture, indexing, illustrations, quantities, and coding; general techniques for computer processing and final preparation of finished publications.
 (5 semester periods)
- 1360.1 Horticulture 1 – Home Gardening**
 Fundamentals of propagation and growth of flowers, plants, and trees; skills and techniques of gardening and nursery practice; home gardening.
 (5 semester periods)
- 1360.2 Horticulture 2 – Home Gardening**
 Advanced course in covering soils, watering, cultivation, pest control, fertilization, pruning, and propagation.
 (5 semester periods)
- 1361 Landscaping**
 Planning and laying out of a home garden, walks, patios, lawns; selection and location of trees, shrubs, vines, and flowers.
 (5 semester periods)
- 1362 Maintenance Gardening**
 Rules and regulations; organization and procedures; human relations; standards of work; daily work schedules; job planning and problems relevant to gardening services; use and maintenance of power mowers and other power equipment; care of gardening tools; replacement and requisition procedures.
 (5 semester periods)
- 1363 Floriculture – Evaluation**
 Flower show practices; study of materials; point judging; flower and plant arrangement; color and design; contemporary and period landscape effects.
 (5 semester periods)

1365-1419 METAL

- 1365.1 Metal Shop 1**
 Shop and theory; skills; processes on bench metal, sheet metal, art metal, ornamental iron, and metal castings.
 (5 semester periods)
- 1365.2 Metal Shop 2**
 Shop and theory; skills; processes on various metal work; forging; heat treating; machine shop practice and welding.
 Prerequisite: Metal Shop 1, or equivalent.
 (5 semester periods)

SUBJECT NO.

- 1366 Sheet Metal – Aircraft**
Shop and theory; fundamentals of aircraft structural mechanics; tools, materials, coatings; blueprint reading; layout and templates; bending equipment; riveting, countersinking, stiffeners, corner ties; terminology.
(5 semester periods)
- 1367 Marine Pipefitting**
Theory class: Ship's nomenclature and compartmentation; pipe and tubing material; pressures; valves, temperature control regulators, traps, and stainers; fuel oil systems, lubricating oil systems; water and steam systems; retubing; distilling; air and oil systems; aircraft fuel. Layout, bending, and targeting.
(5 semester periods)
- 1368.1 Machine Shop 1**
Shop and theory; shop safety; hand tool usage; chipping and filing; shop mathematics; blueprint reading; measurement and layout; drilling machines.
(5 semester periods)
- 1368.2 Machine Shop 2**
Shop and theory; engine lathes and their operation, tapering, boring, and threading; shapers and their operation, shaping plain and irregular work; metal-cutting band saws and their operation.
Prerequisite: Machine Shop 1, or equivalent.
(5 semester periods)
- 1368.3 Machine Shop 3**
Shop theory; operation of milling machines, vertical, horizontal, and universal; operation of grinding machines, surface, cylindrical, and universal; heat treating.
Prerequisite: Machine Shop 1, 2, or equivalent.
(5 semester periods)
- 1368.4 Machine Shop 4**
Shop and theory; operation of turret lathes; tooling for special machines; machine shop production techniques; basic die work.
Prerequisites: Machine Shop 1, 2, or equivalent.
(5 semester periods)
- 1369 Machine Control Systems (Introduction)**
Fundamentals of Machine Control Systems; covers the installation, operation, and maintenance procedures of automatic machines as related to basic control systems pertinent to numerical control.
(5 semester periods)
- 1369.5 Electrochemical Metal Removal Processes**
Theory of electrochemical metal removal; electrochemical milling, machining, grinding; problem solving.
(5 semester periods)
- 1370 Numerical Control Maintenance**
Installation, operation, and maintenance procedures for use with automated machinery as related to basic control systems.
(5 semester periods)

SUBJECT NO.

- 1371.1 Precision Inspection 1**
 Use and care of precision instruments; review of blueprint reading; mathematics pertinent to precision inspection.
 (5 semester periods)
- 1371.2 Precision Inspection 2**
 Continuation of precision inspection, with emphasis on demonstration and practical application.
 Prerequisite: Precision Inspection 1, or equivalent.
 (5 semester periods)
- 1373 New Metal Working Processes**
 Electrical discharge machining; electrical chemical machining, grinding, burring, polishing, forming; tungsten inert gas welding; plasma torches; ultrasonic energy; magnetic forming; capacitor discharge forming; chemical explosives; biaxial hydroforming; controlled milling and drilling; tube tapering and wire drawing; akate machining; exploring new methods.
 (5 semester periods)
- 1374.1 Welding – Acetylene 1**
 Shop and theory; physical properties of ferrous and non-ferrous metals; types of welds and joints; principles of burning, welding, and brazing.
 (5 semester periods)
- 1374.2 Welding – Acetylene 2**
 Shop and theory; horizontal, vertical, and overhead-position welding; plate and joint preparation; effect of heat on metal; metal properties; principles of soldering and brazing.
 Prerequisite: Welding – Acetylene 1, or equivalent.
 (5 semester periods)
- 1377.1 Welding – Arc 1 (Flat Position)**
 Shop and theory; principles of arc welding; practice in horizontal-position welding.
 Prerequisite: Welding – Acetylene 1, or equivalent.
 (5 semester periods)
- 1377.2 Welding – Arc 2 (Vertical Position)**
 Shop theory; making welds on mild steel in horizontal and vertical positions.
 Prerequisites: Welding – Acetylene 1 and Arc 1, or equivalent.
 (5 semester periods)
- 1377.3 Welding – Arc (Horizontal and Overhead Positions)**
 Practical application of all types of welds in all positions; preparatory to taking A.W.S. tests.
 (5 semester periods)
- 1380.1 Welding – Inert Gas 1**
 Shop theory; theory and processes of inert gas welding; emphasis on safety and economy in use of equipment.
 Prerequisites: Welding – Acetylene 1 and Arc 1, or equivalent.
 (5 semester periods)

INDUSTRIAL EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

- 1380.2 Welding – Inert Gas 2**
Shop and theory; applied techniques in welding with inert gas on sheet metal, pipe, and alloy steels.
Prerequisite: Welding – Inert Gas 1, or equivalent.
(5 semester periods)
- 1383.1 Boilermaking – Steel Plate Fabricating 1**
Review of mathematics, including logarithms and their application to slopes and rises.
(5 semester periods)
- 1383.2 Boilermaking – Steel Plate Fabricating 2**
Advanced instruction in theory and practice of template layout and design.
Prerequisite: Boilermaking 1, or equivalent.
(5 semester periods)
- 1384.1 Shipfitting 1**
General orientation of the shipfitter's trade; nomenclature; blueprint reading; planning and lofting; material preparation and control; assembly and welding; safety.
(5 semester periods)
- 1384.2 Shipfitting 2**
Advanced blueprint reading; 1/10 and full-scale lofting; various assembly methods; advanced welding and burning; safety.
(5 semester periods)
- 1384.3 Shipfitting 3**
Review of blueprint reading; shop nomenclature; template making; duplication of templates; shop assembly; layout, foundation layout and outfitting layout.
Prerequisite: Shipfitting 1, 2, or equivalent.
(5 semester periods)
- 1385 Marine Machinist**
Principles of machine tools, lubricants, measurement, propulsion and steering, diesel engines, boilers, hydraulics and air compressors.
(5 semester periods)
- 1386.1 Pressure Vessel Code 1 – Unfired**
Types of materials used; corrosion; strength of materials; welding; riveting; brazing; types of joints; design of pressure-vessel components; and other problems encountered in unfired-pressure vessels.
(5 semester periods)
- 1386.2 Pressure Vessel Code 2 – Fired**
Design, fabrication, erection, repair, and inspection of power boilers, and pressure vessels; related stress, metallurgy, assembly, piping, support, and other problems.
(5 semester periods)
- 1389.1 Heating, Ventilating, and Air Conditioning 1**
Heating, ventilating, and air conditioning theories and methods; properties and application of fuses; venting principles; heating transfer and heating load theory; construction affecting air conditioning installation.
(5 semester periods)

SUBJECT NO.

- 1389.2 Heating, Ventilating, and Air Conditioning 2**
 Continuation of heating systems; theory of air distribution systems; controls for heating and air conditioning; air conditioning cost estimating; cooling systems theory; refrigeration cycle principles; heating theory and measurements; cyclemetrics; equipment selection.
 Prerequisite: Heating, Ventilating, and Air Conditioning 1, or equivalent.
 (5 semester periods)
- 1390 Heating, Ventilating, Refrigeration and Air Conditioning Controls**
 Fundamentals of heating, ventilating, refrigeration, and air-conditioning equipment; controls and their applications; calibration.
 (5 semester periods)
- 1391 Installation and Maintenance of Domestic Air Conditioners**
 Shop and theory; service tools; mechanical cycle; electrical cycle; refrigerants; package units; control systems; water treatment; customer relations.
 (5 semester periods)
- 1392.1 Refrigeration and Air Conditioning 1**
 Basic refrigeration principles; refrigeration cycles, water cooled condensers, evaporative condensers; thermostatic expansion valve; system control, sequence of operation; gauge reading and interpretation; electrical principles; lubrication; safety.
 (5 semester periods)
- 1392.2 Refrigeration and Air Conditioning 2**
 Refrigeration-system controls; operational sequence; electrical principles, wiring diagrams, motors, and measuring instruments; lubrication; gauge reading and safety practices.
 Prerequisite: Refrigeration and Air Conditioning 1, or equivalent.
 (5 semester periods)
- 1395.1 Refrigeration and Steam Plant Operation 1**
 Principles of refrigeration and steam plant operation; basic thermodynamics; heat transfer; elementary fluid flow; humidity; psychometric theory.
 (5 semester periods)
- 1395.2 Refrigeration and Steam Plant Operation 2**
 Refrigeration cycle; refrigerants; basic auxiliary equipment; pumps for steam plant operation; steam generators; water treatment; heat exchangers; turbo generators.
 Prerequisite: Refrigeration and Steam Plant Operation 1, or equivalent.
 (5 semester periods)
- 1398.1 Air Balancing and Testing 1**
 Development of charts; air-duct design; balance procedures, developing and building mock-ups.
 (5 semester periods)
- 1398.2 Air Balancing and Testing 2**
 Development of charts; air duct design; balance procedures; developing and building mockups.
 Prerequisite: Air Balancing and Testing 1, or equivalent.
 (5 semester periods)

INDUSTRIAL EDUCATION**AUTHORIZED SUBJECTS****SUBJECT NO.**

- 1401.1 Thermoplastic Plastics Fabrication 1**
General nature and physical properties of thermoplastic plastics; layout principles; maintenance of tools and machines.
(5 semester periods)
- 1401.2 Thermoplastic Plastics Fabrication 2**
Review of thermoplastics; production planning; hand tool and machine operations; jointing, forming heating, finishing and decorating; experimenting with new materials and methods.
Prerequisite: Thermoplastic Plastics Fabrication 1, or equivalent.
(5 semester periods)
- 1404.1 Thermosetting Plastics 1**
History of plastics; safety, tooling for thermosetting plastics; thermosetting processing; laminating techniques; vacuum bag processes; curing and machinery processing.
(5 semester periods)
- 1404.2 Thermosetting Plastics 2**
Advanced thermosetting plastic processes; tooling, resin systems; curing, repairing and finishing techniques; sandwich structures and adhesive bonding; safety.
Prerequisite: Thermosetting Plastics 1, or equivalent.
(5 semester periods)
- 1405 Clock Repair**
Shop and theory; clock dismantling, cleaning, reworking parts, lathe work, adjusting timepiece, and reassembly.
(5 semester periods)
- 1407.1 Millwright – Hydraulics 1**
Operation and maintenance of hydraulic systems.
(5 semester periods)
- 1410 Review of Hydraulic Problems – Open Channel Flow**
Pen-stock problems; flood predictions; various types of backwater curves; momentum curves; disposal of precipitation involving use of open channel flow; theory of the steady flow of water in open channels.
(5 semester periods)
- 1413 Mechanical Shaft Seals**
Design, construction, installation, operation, maintenance, and fundamental principles of shaft seals, pumps, and turbines; blueprint reading; densities and action of fluids; chemical effects on pumps and seals; hazards of and elimination of vibration and extreme temperatures on all types of mechanical seals.
(5 semester periods)
- 1420-1459 PERSONAL AND PUBLIC SERVICE**
- 1421 Survey of Engineering Operations**
The engineering process; city planning; financing; fields of engineering applications; materials and applications; construction; urban concern.
(2½ semester periods)

SUBJECT NO.

- 1423 Civil Engineering Calculations**
 Geometric design of rural highways; dam problems; hydraulics; introduction to sewage treatment; elementary structures.
 (5 semester periods)
- 1424 Civil Engineering Fundamentals Review**
 Review of structural theory design in steel, concrete, and timber; earthquake design; hydraulics; survey; highway engineering; engineering economics.
 (5 semester periods)
- 1425 Boundary Surveying**
 Surveying lines; their status, their establishment and re-establishment; the duties and obligations of the surveyor; California law; professional ethics and responsibilities.
 (5 semester periods)
- 1426.1 Trigonometry as Applied to Road Surveying**
 Practical surveying problems, using trigonometric functions, right angles, oblique triangles, radian measure and circular arcs, parabolic curves, trigonometric solutions of polygons; state coordinate system.
 (5 semester periods)
- 1426.2 Beginning Road Surveying**
 General survey practices; linear measurements; leveling on plane; transit work; azimuths and bearings; machine calculators; slide rule instructions; simple traverse; circular curves; parabolic curves; public land surveys; road construction surveys.
 (5 semester periods)
- 1426.3 Advanced Problems in Road Surveying**
 Traverse problems; stations at intersections; curve through-a-given-point problem; horizontal curve problems; vertical curve problems; earthwork problems; stadia topography problems; land subdivision problems; cul-de-sac; horizontal control.
 (5 semester periods)
- 1426.4 Advanced Road Surveying**
 Recording survey data for public records; road construction surveys; construction grade sheets; staking for drainage structures; plan checking; road surveys for improvements of new roads.
 (5 semester periods)
- 1427.1 Electrical Engineering Fundamentals Review 1**
 Review of electrical engineering fundamentals.
 (5 semester periods)
- 1427.2 Electrical Engineering Fundamentals Review 2**
 A.C. and D.C. theory; circuits; transmission lines; symmetrical components.
 (5 semester periods)
- 1428 Calculus Review – Engineering**
 Principles of calculus with emphasis on engineering problems; differentiation of transcendental functions; integration of rational fractions; review of other equations, formulas, and problems.
 (5 semester periods)

SUBJECT NO.

- 1429 Techniques of Valve Analysis and Engineering**
Theory techniques, cost of valve engineering, ideation, speculation, analytic planning, execution and presentation phases.
(5 semester periods)
- 1430 Elementary Mechanics – Engineering**
Elements of statics and dynamics and their application to engineering problems; forces and reactions; vector representation; composition and resolution of forces; moments of inertia, acceleration, velocity, power, and energy; and elementary mechanics of fluids.
(5 semester periods)
- 1431 Petroleum Processes**
Basic petroleum processes; survey of the broader elements of the industry; total refinery processes.
(5 semester periods)
- 1432 Construction Specifications and Contracts**
Elements of construction specifications; contracts from the engineer's viewpoint; general conditions; special specifications, material specifications; instructions to bidders, bid documents, bidding procedures; change orders; construction contracts; contract law.
(5 semester periods)
- 1433 Engineer-In-Training Refresher**
Review of fundamental physics, chemistry, and mathematics as applied to engineering problems; mechanics of solids and fluids; application of the equation of state, energy, and motion; elementary problems in light, heat, and sound.
(5 semester periods)
- 1434 Hydraulic Engineering Review**
Review of fluid mechanics; open channel and pipe flow; hydrology and ground water concepts; hydraulics of pumps, pumping, water systems, and water power; economics as pertaining to hydraulics; design of hydraulic structures. This course is specifically designed to meet the needs of men who plan to take the hydraulic option in the California State Civil Engineering Registration Examination.
(5 semester periods)
- 1435.1 Introduction to Stress and Deflection 1**
Mathematic fundamentals; loads from basic machines; weight calculations; center of gravity; elements related to force; design attack; load classification; stress and strain.
(5 semester periods)
- 1435.2 Introduction to Stress and Deflection 2**
Tensile stress and strain test; internal and external forces; structural materials; bending stress; bending deflection; structural shapes; supervised problem "Lab."
(5 semester periods)
- 1436 Appliance Servicing**
Essential basic mathematics, mechanics, and electricity; basic chemistry of water and metals; electric motors and devices used in home appliances; blueprint reading; plumbing practices, nomenclatures, and codes; service and repair of small appliances; gas and electric ranges; clothes washers, dryers, and ironers; disposers and dishwashers; methods of trouble analysis and trouble shooting; elements of customer relations and salesmanship.
(5 semester periods)

AUTHORIZED SUBJECTS

INDUSTRIAL EDUCATION

SUBJECT NO.

- 1437 Processing Milk Products**
 Composition of milk; processing procedures; laboratory procedures; weights and samples; refrigeration; insect and rodent control; clean-up; storage; safety.
 (5 semester periods)
- 1438 Commercial Baking**
 Techniques in volume baking; decoration; principles in use of variety of recipes, etc.
 (5 semester periods)
- 1439.1 Cosmetology 1**
 Review of the theory and practical skills required by the California State Board of Cosmetology.
 (5 semester periods)
- 1439.2 Cosmetology 2**
 Training in the new techniques of hair dressing and styling.
 Prerequisite: Open only to persons with trade experience desiring to obtain or renew licenses issued by the California State Board of Cosmetology.
 (5 semester periods)
- 1440 Hairstyling For Men**
 Basic chemistry; types of preparations; radial cut, hairsetting, hair straightening, hair coloring and bleaching, and make-up.
 (5 semester periods)
- 1442.1 Custodial Engineering 1**
 Cleaning techniques for floors, walls, windows; cleaning, servicing, and minor maintenance of building fixtures; standard and emergency operating procedures.
 (5 semester periods)
- 1442.2 Custodial Engineering 2**
 Principles and techniques of boiler operation; fuels and fuel systems; unit-heating systems; ventilating systems.
 (5 semester periods)
- 1442.3 Custodial Engineering 3 (Supervision)**
 Principles of supervision; inspection of building and grounds; control of supplies and equipment; record-keeping; management of personnel.
 (5 semester periods)
- 1445 Commercial Pool Servicing**
 Principles of maintenance, operation, repair, or construction of swimming pools, including pool design and operation; legal requirements; hydraulics, general construction; filters, gauges, feeders, indicators, chlorination, chemicals, coagulants, and P.H. control.
 (5 semester periods)
- 1449.1 Water Distribution System Practice 1**
 Current practices in design of water distribution system, construction, and operation; water mains, services, meters, regulators, and valves.
 (5 semester periods)

SUBJECT NO.

- 1449.2 Water Distribution System Practice 2**
 Reading grade stakes; locating mains and service; excavation and backfill; regulators; fire hydrant; gate valves; blocks; tank operation; pipe.
 Prerequisite: Water Distribution System Practice 1, or equivalent.
 (5 semester periods)
- 1451.1 Steam Plant Operation 1 – Basic**
 Operation principles of equipment used in modern steam-heating plants; fuel oil; gas-fired furnaces; ventilating systems; diagnosing troubles and safe operating practices.
 (5 semester periods)
- 1451.2 Steam Plant Operation 2 – Basic**
 Steam-plant science; power-plant efficiency and calculations; fuels and combustion; water treatment.
 Prerequisite: Steam Plant Operation 1, or equivalent.
 (5 semester periods)
- 1451.3 Steam Plant Operation 3 – Mathematics**
 Basic mathematics; plane geometry, algebra, and graphs as related to steam plants; physical and chemical processes relating to steam plants; use of steam tables, graphs and charts.
 (5 semester periods)
- 1452 Steam Plant Operation – Pneumatic Controls**
 Principles of steam plant operation and maintenance; pneumatic controls; systems and basic controls; thermostat; pressure controls; valves; operators; unit heaters.
 (5 semester periods)
- 1454.1 Nuclear Energy and Power Plant Applications 1**
 Principles of atomic structure; principles of radiation protection, fission, fusion, and energy release.
 (5 semester periods)
- 1454.2 Nuclear Energy and Power Plant Applications 2**
 Nuclear reactors; nuclear fuels; reactor controls and instrumentation; commercial development of nuclear energy applied to power plant operation.
 Prerequisite: Nuclear Energy and Power Plant Applications 1, or equivalent.
 (5 semester periods)
- 1455 Marine Training – Marine Fireman and Oiler**
 Boilers and their operation; fuel oil system; water system; turbine engines.
 (5 semester periods)
- 1457.1 Vocational Rehabilitation 1**
 Occupational rehabilitation for persons seeking employment.
 (5 semester periods)
- 1457.2 Vocational Rehabilitation 2**
 Development of hand skills; plastic and woodworking; mending; painting; garment design and cutting; use of power sewing machines.
 (5 semester periods)

SUBJECT NO.

1460-1474 SUPERVISION

- 1461.1 Industrial Supervision 1 – Beginning**
 Survey course in the principles of supervision in industrial plants, covering essentials of organization, employee and employer relations, industrial economics, labor relations, records and reports.
 (5 semester periods)
- 1461.2 Industrial Supervision 2 – Intermediate**
 Detailed study of the total responsibilities of the supervisor in industry, such as: organization, selection, placement, and training of personnel; labor relations and laws; and the basis of management.
 (5 semester periods)
- 1461.3 Industrial Supervision 3 – Advanced**
 General principles and concepts of company management; production planning and control; practical applications to the areas of manpower, materials, manufacturing, quality, and financial planning and control.
 (5 semester periods)
- 1466.1 Manufacturing Cost Estimating 1**
 Manufacturing engineering estimations; tests and equipment; labor costs; learning curve and calculations; burdens and profit; special estimating techniques.
 (5 semester periods)
- 1466.2 Manufacturing Cost Estimating 2**
 Initiation of cost request; methods of estimating; cost estimate; manufacturing plan; estimating costs of labor, materials; inspection, testing, and packaging; accounting procedures.
 (5 semester periods)

1475-1484 TEXTILE AND APPAREL

- 1476.1 Upholstery 1**
 Tools, equipment, materials, furniture frames; construction methods and techniques; basic power sewing, padding, and final-cover application.
 (5 semester periods)
- 1476.2 Upholstery 2**
 Frame preparation; unit construction of arms, wings, seats, backs; cover layout and cutting final cover and trim application; cost estimating of jobs.
 Prerequisite: Upholstery 1, or equivalent.
 (5 semester periods)
- 1479.1 Power Sewing – Single Needle 1**
 Shop and theory; power control; care and operation of machine.
 (5 semester periods)
- 1479.2 Power Sewing – Single Needle 2**
 Use of commercial patterns; construction of details; garment assembling; safety practices.
 (5 semester periods)

INDUSTRIAL EDUCATION**AUTHORIZED SUBJECTS****SUBJECT NO.**

- 1482.1 Power Sewing – Special Machines 1**
Shop and theory; power control; care and operation of special machines – overlock; two-needle shirrer, buttonhole, blindstitch, and hemstitch.
Prerequisite: Power Sewing – Single Needle, or equivalent.
(5 semester periods)
- 1482.2 Power Sewing – Special Machines 2**
Proper use of commercial patterns; construction of detail and garment assembling; safety practices.
Prerequisite: Power Sewing – Single Needle, or equivalent.
(5 semester periods)
- 1482.3 Fashion Illustration**
Fundamentals of proportion and the mechanics of constructing a fashion figure; basic garment shapes; drawing techniques and art media; methods of presentation; history of fashion illustration, and wearing apparel.
Prerequisite: None – sketching ability desirable.
(5 semester periods)
- 1485-1499 WOODWORKING**
- 1486.1 Woodworking 1**
Shop and theory; basic hand tools skills and processes; operation of woodworking machinery; wood finishing; emphasis upon workmanship, construction, design, finish, and safety practices.
(5 semester periods)
- 1486.2 Woodworking 2**
Shop and theory; advanced study in the use of hand- and power-tools, including portable electric tools and spray guns; wood finishes; home repair; furniture and boat construction.
Prerequisite: Woodworking 1, or equivalent.
(5 semester periods)
- 1489.1 Furniture Repair and Finishing**
Shop and theory; selection and use of hand-tools, material, and equipment.
Prerequisite: Woodworking 1, or equivalent.
(5 semester periods)
- 1489.2 Cabinetmaking and Millwork**
Shop and theory; lumber measurement and estimation; detailing and stockbilling; machine work; geometrical layouts; production procedures; plastic laminations; layout and construction of millwork; veneers; modular construction; hardware; glass and mirrors.
Prerequisite: Furniture Repair and Finishing.
(5 semester periods)
- 1490 Detailing and Stockbilling**
Shop and theory; fundamentals of mechanical and architectural drafting; detail drawings and stockbill analysis; planning details; securing site dimensions.
(5 semester periods)

SUBJECT NO.

- 1497 Shipwright, Joiner, and Boat builder**
 Fundamentals of the shipwright, joiner, and boatbuilder trade as applied in the naval and civilian shipyards: The techniques applied in scaffolding, decking, layout lines and transit, drydocking, blueprint reading and plastic boatbuilding.
 (5 semester periods)

1500-1599 PRE-EMPLOYMENT TRADE AND TECHNICAL EDUCATION

1505-1508 APPAREL

- 1505 Garment Trades**
 Shop work and theory; sewing techniques; draping and pattern making; grading; garment making, sketching, theory of designing; care and maintenance of equipment, threading machines, needle identification; identification and use of attachments; construction of garment detail, garment assembly, and construction.
 (30 semester periods)*
- 1506 Upholstery**
 Shop work and theory; upholstering of footstools, benches, chairs, chaise lounges, and davenports; materials and fabrics; methods and techniques of springing, stuffing, covering, and cushion-working.
 (10 semester periods)

1510-1514 COMMERCIAL ART

- 1510 Commercial Art Production**
 Advertising lettering; production layout; showcard writing; silk screen processing; package design and production; poster lettering and art; neon-sign design and layout; atmospheric and geographic backgrounds for displays.
 (10 semester periods)
- 1511 Technical Illustration**
 Isometric and orthographic projections, oblique and perspective drawings, freehand sketching, and technical drawing of parts and assemblies; translation of mechanical drawings and blueprints to pictorial illustrations; proper tools and materials; processes for reproduction of illustrations.
 (10 semester periods)

1515-1529 AUTOMOTIVE

- 1515 Auto, Body, and Fender Repair**
 Shop work and theory; basic techniques used in removing and replacing bent and buckled metal; replacing and aligning damaged side panels, turret-tops, fenders, woods; soldering, welding, grinding, sanding, washing, polishing, waxing, steam-cleaning, painting touch-up, interior cleaning, spotting, and detailing.
 (10 semester periods)
- 1516 Auto Front-End Alignment and Brakes Installation**
 Shop work and theory; principles involved in suspension, steering, power-steering, wheel alignment, wheel balance, hydraulic and power brakes; disassembly, inspection, reassembly and adjustment of suspension and steering systems; installation of brake lining and shoes; arc grinding, shoe reconditioning, drum turning, and complete servicing of braking systems.
 (10 semester periods)

*Credits can be earned up to maximum number indicated.

INDUSTRIAL EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

1517 Auto Tune-Up

Shop work and theory; electrical, carburetor, and fuel systems; checking of complete engine performance, making tests and adjustments; use of test equipment and the dynamometer.

(10 semester periods)

1518 Motorcycle Mechanic

Shop and theory; orientation to motorcycle industry; internal combustion engine, assembly and disassembly; electrical system; lubrication system; power transmissions; frame and suspension; wheel and brake; tests, instruments and tune-up.

(25 semester periods)*

1530-1539 CONSTRUCTION AND MAINTENANCE

1530 Office Machine Repair

Shop work and theory; the disassembly, repair, reassembly, and adjustment of manual and electric typewriters; manual and electric adding machines; and calculators of all frequently-used types.

(30 semester periods)*

1545-1554 FOOD SERVICE

1545 Commercial Food Preparation

Shop and theory; decorating pastries for hot and cold buffets; holidays, and special occasions; decorating cakes with figures, lettering, rising gum paste, marzipan to create flowers; use of border work, special cakes; breakfast dishes, salads, vegetables, variety and ground meat, sauces and gravies, desserts; flavors, extracts, seasonings, herbs; menus and merchandising; canned food, types of food service, food costs, and purchasing.

(25 semester periods)*

1555-1564 DRAFTING

1555 Architectural Drafting

Shop work and theory; basic principles in drawing of house plans, construction as required by City of Los Angeles building codes; emphasis on construction and detailing of windows and doors, fireplaces and chimneys, stair layouts, cabinets, symbols, new building materials, heating; historic styles, sketching, shading, perspective, and simple rendering.

(25 semester periods)*

1556 Mechanical Drafting and Blueprint Reading

Orthographic and isometric drawings of machine parts, shop details, and sections; orthographic and pictorial drawings of machine parts, shop details, auxiliary projections, screws and threads; geometrical problems and development of mechanical motions, rivets, keys and fastenings, shop detailings; interpretation of three-view drawings; sections; isometric and oblique drawing; development of plans; elevations and details; reading of blueprints.

(15 semester periods)*

1570-1579 ELECTRONICS

1570 Electronic Assembly

Shop work and theory; fundamentals of assembly, subassembly, production techniques; blueprint and schematics interpretations; skills required in the electronics production and manufacturing industry; theory of and practice in planning; use of tools; selection of materials; fabrication and packaging as related to this field.

(5 semester periods)

*Credits can be earned up to maximum number indicated.

AUTHORIZED SUBJECTS

INDUSTRIAL EDUCATION

SUBJECT NO.

- 1571** **Radio and Television Repair**
Shop and theory; repair and testing of television and radio receivers.
(30 semester periods)*

1580-1589 METALS

- 1580** **Welding – Electric and Gas**
Shop work and theory; welding of mildsteel in horizontal, vertical, overhead, and/or flat positions; arc-air cutting; machine cutting; use of inert gas; six welding methods involving stainless as well as mild steel, titanium, aluminum, and magnesium.
(20 semester periods)*

1590-1599 PRINTING

- 1590** **Offset and Letterpress Printing**
Shop work and theory; fundamentals of hand and machine composition; cold type, platen, and job cylinder letterpress presswork; simple bindery operations.
(30 semester periods)*

*Credits can be earned up to maximum number indicated.

1600-1649 MUSIC EDUCATION

SUBJECT NO.

1600-1607 INSTRUMENTAL

- 1601 Instrumental Techniques**
Basic techniques used in playing instruments of the orchestra; band and other instruments used for accompaniment and solo work — guitar, accordion.
(5 semester periods)
- 1603 Orchestra**
Orchestral repertoire, including the classical, romantic, and modern compositions.
Prerequisite: Ability to be determined by director.
(5 semester periods)
- 1605 Band**
Band literature suitable to various types of bands — concert and popular; arrangements and compositions as related to the needs of studio, radio, and television work; related activities.
Prerequisite: Ability to be determined by director.
(5 semester periods)

1608-1612 ORGAN

- 1609 Organ — Beginning**
Basic keyboard and pedalboard techniques; note reading; keyboard harmony; playing of compositions suitable to the beginning stage of learning.
(5 semester periods)

1613-1619 PIANO

- 1614.1 Piano — Beginning**
Basic knowledge of the keyboard; development of manual dexterity at the keyboard; note reading; recognition of melodic figures; harmonic figures and rhythm motifs; tone production; chord building; use of pedal interpretation of simple compositions.
(10 semester periods)
- 1614.2 Piano — Intermediate**
Development of technique, expression, dexterity, variety of touch, and passage playing; interpretation of compositions more advanced than in previous course.
(10 semester periods)
- 1614.3 Piano — Advanced**
Piano repertoire; modern and classical compositions; preparation for commercial playing; popular types of compositions and rhythms; accompanying vocal and instrumental soloists and ensembles.
(10 semester periods)

SUBJECT NO.

1620-1629 THEORY

- 1621.1 Fundamentals of Music 1**
Sight singing and tone hearing; scale construction; key signatures; time and rhythm practice; major and minor modes; simple song dictation.
(5 semester periods)
- 1621.2 Fundamentals of Music 2**
Continuation of Fundamentals of Music 1; sight reading of all types of musical compositions; music dictation; intensive study of sight singing and listening skills.
Prerequisite: Fundamentals of Music 1.
(5 semester periods)
- 1623 Harmony**
Theory and practice of music notation; all types of chords and their relationships; harmonization of melodies; diatonic harmonies; simple chromatic alterations; chromatic harmonies; modulation; beginning work in scoring and creative compositions.
Prerequisite: Fundamentals of Music 1, or equivalent.
(10 semester periods)
- 1625 Music Composition**
Construction, development, and style of original music composition; scoring and arranging instrumental and vocal compositions.
Prerequisite: Harmony, or equivalent.
(5 semester periods)
- 1627 Music Arranging**
Musical penmanship; part copying; score extractions; transposing.
(5 semester periods)

1630-1639 VOCAL

- 1631.1 Voice 1 – Fundamentals of Singing**
Basic musicianship; breath support; tone production; diction; physical and mental aspects of singing; qualities of tone and their uses; practice of vocal embellishments and other related exercises; song literature suitable to the beginning phase of vocal development; part singing.
(5 semester periods)
- 1631.2 Voice 2 – Advanced**
Continuation of Fundamentals of Singing; repertoire and advanced vocalizing suitable to this phase of vocal cultivation; part singing.
Prerequisite: Voice 1 – Fundamentals of Singing, or equivalent, to be determined by the instructor.
(5 semester periods)
- 1633 Song Coaching and Recital Practice**
Repertoire building; phrasing; diction; application of dynamic and dramatic notations; stage deportment; microphone techniques for radio, television, and related activities.
Prerequisite: Audition.
(5 semester periods)

MUSIC EDUCATION

AUTHORIZED SUBJECTS

SUBJECT NO.

1635 **Chorus**
Choral literature; tonal blend and phrasing; following the director; time and rhythm practice; ensemble singing as related to current radio, television, and studio demands; a cappella choir.
Prerequisite: Ability of students to benefit from course to be determined by director.
(5 semester periods)

1637 **Opera and Operetta Workshop**
Production of operas and operettas; stage management and direction.
Prerequisite: Audition.
(5 semester periods)

1640-1649 MUSIC, GENERAL

1641 **Music Appreciation**
Music history and literature; classic, romantic, and modern styles; opera, operetta, folk music, art songs, and concert music; forms of commercial music; listening to music.
(5 semester periods)

1643 **Music Conducting**
Use of the baton; basic time and rhythm patterns; study and practice of materials suited for choral and instrumental ensembles.
Prerequisites: Sufficient musical background to be determined by instructor.
(5 semester periods)

INDEX

Accent Removal and Speech Improvement (794) . . .	42	Auto, Body, and Fender Repair –	
Accessories, Fabric (934)	51	Pre-Employment (1515)	95
Acetylene, Welding (1374)	85	Auto Brakes (1129)	67
Accounting (304)	17	Auto Electrics (1132)	67
Accounting, Credit Union Management (469)	23	Auto Front End Alignment and Brakes	
Acting, Radio and Television (246)	16	Installation – Pre-Employment (1516)	95
Acting Techniques, Basic (241)	16	Auto Mechanics (1126)	67
Adult Basic Education (775)	40	Auto Mechanics – Appr. (1004)	56
Advanced First Aid (837)	46	Auto Tune-Up – Pre-Employment (1517)	96
Advanced, Grammar and Composition (5)	1	Automatic Transmissions (1135)	68
Advanced Problems in Road Surveying (1426)	89	Automobile Air Conditioning (1142)	68
Advanced Road Surveying (1426)	89	Automobile Material Damage Adjustment	
Advanced Selling (542)	25	Insurance (430)	21
Advanced Speech (234)	16	Automotive Detailing (1145)	69
Advertising, Fundamentals of (520)	24	Automotive Parts Counterman (1127)	67
Aeronautical Navigation (703)	35	Automotive Upholstery (1139)	68
Aeronautics (168)	12		
Aeronautics, Civil (701)	35	Band (1605)	98
Aeronautics: Commercial – Instrument Ground		Barbering – Appr. (1007)	56
School (704)	35	Basic Acting Techniques (241)	16
Afro-American Art (808)	43	Basic Animal Control Information (765)	39
Afro-American Culture (225)	16	Basic Art and Still Life (809)	43
Air Balancing and Testing (1398)	87	Basic Civil Service Information (767)	39
Air Cargo Transportation (668)	33	Basic Data Processing Machine Operation (323)	18
Airbrush Painting (1192)	73	Basic Drafting (1185)	72
Air Conditioning, Automobile (1142)	68	Basic Electricity (1251)	76
Air Conditioning, Heating, Ventilating and (1389)	86	Basic Mathematics (94)	8
Air Conditioning, Refrigeration and (1392)	87	Basic Principles of Photogrammetry (1235)	76
Algebra (91)	7	Basic Public Health Entomology (878)	48
Algebra, Industrial (100)	9	Beginning Road Surveying (1426)	89
American Literature (10)	2	Biology (140)	10
American Problems and Government,		Biology, Marine (141)	11
Contemporary (194)	13	Blueprint Reading (1176)	71
Apartment House Law and Management (582)	27	Blueprint Reading – Ship Building (1180)	72
Appliance Servicing (1436)	90	Boat Safety, Seamanship and (702)	35
Applied Chemistry (131)	10	Boilermaking – Appr. (1010)	56
Applied Psychology (213)	14	Boilermaking – Steel Plate Fabricating (1383)	86
Appraisal, Real Estate (567)	26	Bonsai – Trees and Landscapes (828)	44
Arc Welding (1377)	85	Bookkeeping (301)	17
Archeology of Mexico (211)	14	Boundary Surveying (1425)	89
Architectural Drafting (1194)	73	Budget Preparation, Government (305)	17
Architectural Drafting – Pre-Employment (1555)	96	Building Codes (1151)	69
Arithmetic Fundamentals (777)	40	Building Construction Estimations – Class A and B	
Arithmetic Review (92)	8	Construction (1163)	70
Art Appreciation (806)	43	Building Construction Laws (450)	22
Art, Basic and Still Life (809)	43	Building Inspection – Electrical (1162)	70
Art, Introduction to Japanese (825)	44	Building Inspection – Welding (1161)	70
Art, Publication (1352)	82	Building Residential or Income Property (589)	27
Assembly Jigs and Fixture Design (1224)	75	Business Conference Leading (489)	24
Auto Body and Fender Repair (1144)	69	Business Correspondence (380)	20

Business English (378)	20	Commercial Baking (1438)	91
Business Law (441)	21	Commercial Driving (715)	36
Business Machines (341)	19	Commercial Floristry Design (539)	25
Business Management, Small (459)	22	Commercial Food Preparation –	
Business Mathematics (385)	20	Pre-Employment (1545)	96
Business Organization and Practice (375)	20	Commercial Pool Servicing (1445)	91
Business Psychology (477)	23	Commercialization of Mineral Resources (158)	12
Cabinetmaking and Millwork (1489)	94	Communication for Supervisors (498)	24
Cabinetmaking and Millwork – Appr. (1013)	57	Communications – Telephone (1302)	80
Cadastral and Topographic Mapping (1233)	76	Communications – Telephone Circuits (1305)	80
Calculators, Comptometry – Key-Driven (346)	19	Communications – Telephone Electronics (1308)	80
Calculators, Key-Driven (345)	19	Comparative Religions (220)	15
Calculus Review – Engineering (1428)	89	Composition, Advanced Grammar and (5)	1
California History and Government (208)	14	Composition, Intermediate Grammar (5)	1
Carpentry – Appr. (1016)	57	Composition, Music (1625)	99
Cashiering and Grocery Checking Retail (535)	25	Comptometry – Key-Driven Calculators (346)	19
Casualty Insurance (424)	21	Computer Programming, Electronic (326, 327)	18
Catalog Parts Compiler (1359)	83	Computer Programming, Electronic – RMAC 305	
Ceramics (827)	44	Machine (329)	18
Chemistry (134)	10	Concrete Masonry – Appr. (1019)	59
Chemistry, Applied (131)	10	Conference Leading, Business (489)	24
Chemistry, Fire (721)	36	Condominiums (587)	27
Child Care Assistant (986)	55	Conducting, Music (1643)	100
Child Observation (957)	52	Construction Equipment Mechanics – Appr. (1020)	59
Children's Clothing Construction (894)	49	Construction Equipment Operation – Appr. (1021)	60
Chinese (51)	3	Construction Laws, Building (450)	22
Chorus (1635)	100	Construction Layout (1163)	71
Cinema Photography (1337)	81	Construction Specifications and Contracts (1432)	90
Citizenship (786)	41	Consumer Education (909)	50
City Government (761)	38	Consumer Education – Home Management (911)	50
Civil Aeronautics (701)	35	Contemporary American Problems and	
Civil Engineering Calculations (1423)	89	Government (194)	13
Civil Engineering Drafting (1195)	74	Contemporary Moral Issues (221)	15
Civil Engineering Fundamentals Review (1424)	89	Contemporary Painting (818)	44
Civil Process and Procedural Law (753)	38	Contractor License Preparation (1163)	71
Civil Service Information, Basic (767)	39	Controls, Production Planning and (495)	24
Civil Service Preparation (388)	20	Conversational Spanish for School District	
Civil Service Rules, Municipal (768)	39	Personnel (83)	7
Claims Adjustment, Insurance (436)	21	Correspondence, Business (380)	20
Clock Repair (1405)	88	Cosmetology (1439)	91
Clothing Construction (886)	49	County Government (764)	38
Clothing Construction – Men's Tailoring (892)	49	Court Reporting (600)	29
Clothing Construction – Tailoring (889)	49	Creative Design – Home Accessories (931)	51
Clothing Construction Textile Arts (895)	49	Creative Life for Women (975)	54
Clothing – Wardrobe Planning, Selection, and		Creative Stitchery (931)	51
Care (898)	50	Credit and Collections (364)	19
Collections, Credit and (364)	19	Credit, Fundamentals of (361)	19
Color Photography (1334)	81	Credit Union Management and Accounting (469)	23
Commercial Art and Lettering (1349)	82	Credit Union Management, Principles of (468)	22
Commercial Art Production –		Criminal Process and Procedure (752)	38
Pre-Employment (1510)	95	Critical Path Method, PERT and (331)	18
		Current Merchandising Problems (517)	24

Custodial Engineering (1442)	91	Electronic Computer Programming (326, 327)	18
Custom Clothing Design and Pattern Development (890)	49	Electronic Computer Programming – Ramac 305 Machine (329)	18
Data Processing, Basic Machine Operation (323)	18	Electronic Equipment, Industrial (1284)	79
Data Processing, Introduction to (322)	18	Electronic Fundamentals and Schematics (1272)	78
Decoration, Interior (937)	51	Electronic Instrumentation (1279)	78
Dental Assistant (862)	48	Electronic Production Techniques (1269)	77
Descriptive Geometry, Industrial (103)	9	Electronic Test Equipment (1278)	78
Design, Machine Tool (1218)	75	Electronics – Fundamentals (1275)	78
Detailing and Stockbilling (1490)	94	Electronics, Industrial (1284)	79
Dictation, Legal (597)	29	Electronics – Inspection (1270)	78
Dictation, Medical (603)	29	Electronics – Mathematics (1281)	79
Dictation, Shorthand (595)	28	Elementary Mechanics – Engineering (1430)	90
Dictation, Stenotype (612)	30	Elementary Subjects (776)	40
Die Design (1227)	75	Employee Instructions (486)	23
Die Sinker – Appr. (1023)	60	Employee Relations (483)	23
Die Sinker – Appr. (1024)	61	Engineering, Custodial (1442)	91
Diesel Engines (1146)	69	Engineering, Elementary Mechanics (1430)	90
Digital Computers, Introduction to (1313)	80	Engineering Operation, Survey of (1421)	88
DMV-Clerk, Office Practices and Procedures (625)	31	Engineer-in-Training Refresher (1433)	90
Drafting, Architectural (1194)	73	English (1)	1
Drafting, Basic (1185)	72	English, Grammar and Composition (5)	1
Drafting, Electromechanical (1190)	72	English, Business (378)	20
Drafting, Mechanical (1188)	72	English, 8th-Grade Level (782)	41
Drama, Basic Acting Techniques (241)	16	English, Intermediate Grammar and Composition (5)	1
Drama, Play Productions (243)	16	English As a Second Language (791)	41
Drama, Principles of (240)	16	English Literature (13)	2
Drama, Radio and Television Acting (246)	16	English Review and Reading Improvement (7)	2
Driver Education (711)	35	English Review and Reading Improvement – Elementary (783)	41
Driver Instruction (712)	35	Entomology, Basic Public Health (878)	48
Driving, Commercial (715)	36	Escrow Practices (585)	27
Driving and Safety, Truck (717)	36	Estate Planning – Laws of Wills, Trusts, and Estates (447)	22
Dry Wall Installation (1170)	71		
		Fabric Accessories for the Home (934)	51
Economics (219)	15	Family Care, Home Management and (915)	50
Economics, Transportation (694)	34	Family Survival, Individual (707)	35
Electric Motor Controls (1255)	76	Family with Special Needs (971)	54
Electrical Codes and Ordinances (1260)	77	Fashion Illustration (1482)	94
Electrical Estimating (1263)	77	Fashion Sketching and Illustration (900)	50
Electrical Engineering Fundamentals and Review (1427)	89	Fender Repair, Auto Body and (1144)	69
Electrical Fixture Fabricating – Lighting Fixtures – Appr. (1025)	61	Filing (621)	31
Electrical Power Generation and Distribution (1266)	77	Finance, Personal (370)	19
Electrical Wiring and Code (1257)	76	Finance, Real Estate (573)	27
Electrical Wiring Theory (1254)	76	Finger Spelling and Sign Language (28)	3
Electricity, Basic (1251)	76	Fire and Inland Marine Insurance (427)	21
Electrochemical Metal Removal Processes (1369)	84	Fire Chemistry (721)	36
Electromechanical Assembly (1267)	77	Fire Company Administration (723)	36
Electromechanical Drafting (1190)	72	Fire – Fighting Techniques (727)	36
Electronic Assembly – Pre-Employment (1570)	96	Fire Science (725)	36
		Fire Science – Hydraulics (726)	36

First Aid, Advanced (837)	46	Government, United States and World	
First Aid, Instructor Course (839)	46	Affairs (197)	13
First Aid, Standard (836)	46	Grammar and Composition (5)	1
Fixture Design, Assembly Jigs and (1224)	75	Grocery Checking, Retail Cashiering and (535)	25
Fixture Design, Dies, Machines, Jigs, and (1227)	75	Guidance (222)	15
Fixture Fabricating, Electrical – Appr. (1025)	61	Guidance, Vocational (223)	15
Floor Covering – Appr. (1037)	62		
Floor Covering – Hand Made (940)	51	Hairstyling for Men (1440)	91
Floriculture (1363)	83	Harmony (1623)	99
Floristry Design, Commercial (539)	25	Health and Hygiene (876)	48
Food Handling and Sanitation (880)	48	Heating, Ventilating, and Air Conditioning (1389)	87
Food Management and Sanitation (882)	48	Heating, Ventilating, Refrigeration, and	
Foreign Freight Forwarding (679)	33	Air-Conditioning (1390)	87
Foundry Molding and Core Making – Appr. (1060)	63	Heavy Duty Brakes (1133)	68
Freight Claims (683)	34	Heavy Duty Electrical and Carburetion	
Freight Forwarder Rates (682)	33	Systems (1134)	68
French (54)	4	Heavy Duty Transmission Automotive (1136)	68
French Conversation (57)	4	Hebrew (66)	5
Fundamentals of Advertising (520)	24	High School Mathematics (97)	8
Fundamentals, Arithmetic (777)	40	History and Culture, Mexican-American (209)	14
Fundamentals of Credit (361)	19	History and Government, California (208)	14
Fundamentals of Geology (161)	12	History, Negro (210)	14
Fundamentals of Inertial Guidance Systems (1101)	67	History, United States (186)	12
Fundamentals of Insurance (421)	20	History, World (204)	13
Fundamentals, Life Insurance (433)	21	Home Accessories, Creative Design (931)	51
Fundamentals of Music (1621)	99	Home Furnishings, Selling (526)	25
Fundamentals of Selling (541)	25	Home Health Aide (855)	47
Fundamentals, Supervision (480)	23	Home Management and Family Care (915)	50
Furnishings, Selling Home (526)	25	Home Management (Housing Authority	
Furniture Refinishing and Home Improvement (945)	52	Contract) (912)	50
Furniture Repair and Refinishing (1489)	94	Home Nursing (928)	51
		Home Planning and Remodeling (1172)	71
Gardening, Maintenance (1362)	83	Horticulture (1360)	83
Garment Trades – Pre-Employment (1505)	95	Hospital Procedures and Practices, Nursing (856)	47
General Police Information (736)	37	Household Appliance Servicing 1 – Appr. (1043)	62
General Science (137)	10	Household Carriers (669)	33
Geography, World (200)	13	How the Child Learns (963)	53
Geology, Fundamentals of (161)	12	Humanities, Introduction to the (218)	15
Geometry, Plane (112)	9	Hunter Safety Instructor Training (732)	37
Geometry, Solid (118)	10	Hydraulic Engineering Review (1434)	90
Geriatric Nursing (858)	48	Hydraulic Problems, Review of – Open Channel	
German (60)	4	Flow (1410)	88
German, Basic Scientific (61)	5	Hydraulics, Millwright (1407)	88
German Conversation (63)	5	Hygiene, Health and (876)	48
Gerontology (770)	39		
Governmental Budget Preparation (305)	17	I.C.C. Practice and I.C. Law (676)	33
Government, City (761)	38	Illustration, Technical (1191)	73
Government, Contemporary American Problems		Income Property, Building Residential or (589)	27
and (194)	13	Income Tax (316)	17
Government, County (764)	38	Individual and Family Survival (707)	35
Government, United States (188)	13	Industrial Algebra (100)	9

Industrial Descriptive Geometry (103)	9	Jewelry (801)	43
Industrial Electronics – Basic (1284)	79	Journalism (21)	2
Industrial Mathematics (106)	9	Key-Driven Calculators (345)	19
Industrial Supervision (1461)	93	Key-Driven Calculators, Comptometry (346)	19
Industrial Trigonometry (109)	9	Key Punch (321)	18
Inert Gas, Welding (1380)	85	Labor Relations in Transportation (692)	34
Inertial Guidance Systems, Fundamentals of (1101)	67	Laboratory Procedures, Medical (633)	31
Inland Marine Insurance, Fire and (427)	21	Landscape and Marine Painting (812)	43
Inspection, Electronics (1270)	78	Landscaping (1361)	83
Inspection, Precision (1371)	85	Lapidary (804)	43
Installation and Maintenance of Domestic Air Conditioning (1391)	87	Law and Evidence, Police (742)	37
Instructor Course First Aid – Red Cross (839)	46	Law and Management, Apartment House (582)	27
Instrumental Techniques (1601)	98	Law, Business (441)	21
Institute, Sales (553)	26	Law Enforcement, Introduction to (735)	37
Institutional Management (475)	23	Law for Laymen (444)	22
Insurance, Automobile Material Damage Adjustment (430)	21	Law, Real Estate (564)	26
Insurance, Casualty (424)	21	Law of Wills, Trusts, and Estates, Estate Planning (447)	22
Insurance Claims Adjustment (436)	21	Laws, Building Construction (450)	22
Insurance, Fire and Inland Marine (427)	21	Leadership Training (731)	37
Insurance, Fundamentals of (421)	20	Leadership Training for Older Adults (772)	39
Insurance Inspecting (435)	21	Leadership Training in Human Relations (980)	54
Insurance Fundamentals, Life (433)	21	Leadership, Volunteer (981)	54
Insurance, Medical (439)	21	Legal Dictation (597)	29
Insurance Office Procedures (630)	31	Legal Procedures for Juvenile Traffic (756)	38
Interior Decoration (937)	51	Legal Procedures for Secretaries (627)	31
Intermediate, Grammar and Composition (5)	1	Lettering, Commercial Art and (1349)	82
International Trade (685)	34	Library Fundamentals (22)	2
Interstate Commerce Act (673)	33	Life Insurance Fundamentals (433)	21
Interstate Commerce Law and Practice (691)	34	Life-Saving – Instructor Red Cross (852)	47
Introduction to Data Processing (322)	18	Life-Saving – Senior Red Cross (851)	46
Introduction to Digital Computers (1313)	80	Lip Reading (27)	2
Introduction to Japanese Art (825)	44	Literature, American (10)	2
Introduction to Law Enforcement (735)	37	Literature, English (13)	2
Introduction to Modern Mathematics (96)	8	Literature, Modern (16)	2
Introduction to Preschool Education (985)	54	Literature, World (19)	2
Introduction to the Humanities (218)	15	Machine Control Systems (1369)	84
Introduction to Stress and Deflection (1435)	90	Machine Shop (1368)	84
Investments (373)	19	Machine Tool Design (1218)	75
Investments, Real Estate (588)	27	Machines, Business (341)	19
Ironworking, Architectural and Ornamental – Appr. (1046)	62	Machines, Transcribing (352)	19
Ironworking – Reinforcing – Appr. (1049)	62	Maintenance Gardening (1362)	83
Ironworking – Structural and Ornamental Erectors – Appr. (1052)	63	Management Accounting, Credit Union (469)	23
Ironworking – Structural and Ornamental Fabricators – Appr. (1055)	63	Management, Apartment House Law and (582)	27
Italian (69)	5	Management, Institutional (475)	23
Japanese (72)	5	Management of Homes for the Aging (774)	39
Japanese Art, Introduction to (825)	44	Management, Office (462)	22
		Management, Personal (476)	23
		Management, Principles of (456)	22

Management, Principles of Credit Union (468)	22	Modern Mathematics for Parents –	
Management, Property (579)	27	Elementary (964)	53
Management, Public Relations (471)	23	Modern Mathematics for Parents – Secondary (964)	53
Management, Sales (465)	22	Modern Science (143)	11
Management, Service Station Sales and (525)	24	Moral Issues, Contemporary (221)	15
Management, Small Business (459)	22	Motion Picture Property Craftsmanship –	
Management, Travel Agency (466)	22	Appr. (1017)	58
Mankind, Way Of (217)	15	Motion Picture Set Designers – Appr. (1018)	58
Manufacturing Cost Estimating (1466)	93	Motor Rates (664)	32
Mapping, Cadastral and Topographic (1233)	76	Motorcycle Mechanic (1149)	69
Marine Biology (141)	11	Motorcycle Mechanic – Pre-Employment (1518)	96
Marine Electricity (1258)	77	Municipal Civil Service Rules and Procedures (768)	39
Marine Engine Fuel and Electric (1150)	69	Music Appreciation (1641)	100
Marine Insurance, Fire and Inland (427)	21	Music Arranging (1627)	99
Marine Machinist (1385)	86	Music Composition (1625)	99
Marine Painting, Landscape and (812)	43	Music Conducting (1643)	100
Marine Pipefitting (1367)	84	Music, Fundamentals of (1621)	99
Marine Training – Firemen and Oiler (1455)	92		
Marketing Practices (514)	24	Navigation, Aeronautical (703)	35
Marketing, Principles of (511)	24	Negro History (210)	14
Masonry, Concrete – Appr. (1019)	59	New Metal Working Processes (1373)	85
Mathematical Analysis (124)	10	Norwegian (75)	6
Mathematics, Basic (94)	8	Nuclear Energy and Power Plant Applications (1454)	92
Mathematics, Business (385)	20	Numerical Control Maintenance (1370)	84
Mathematics, High School (97)	8	Nursing – Basic Nursing Procedures (856)	47
Mathematics, Industrial (106)	9	Nursing – Basic Nursing Theory (856)	47
Mathematics of Retailing (532)	25	Nursing – Conditions of Illness (856)	47
Mathematics, Practical (95)	8	Nursing, Geriatric (858)	48
Meat Cutting – Appr. (1064)	64	Nursing, Home (928)	51
Mechanical Drafting (1188)	72	Nursing – Hospital Procedures and Practices (856)	47
Mechanical Drafting and Blueprint Reading –		Nursing – In-Service Training for Nursing	
Pre-Employment (1556)	96	Personnel (865)	48
Mechanical Shaft Seals (1413)	88	Nursing – Maternal and Child Care (856)	47
Mechanics, Auto (1126)	67		
Mechanics, Auto – Appr. (1004)	56	Office Machine Repair – Appr. (1068)	64
Medical Dictation (603)	29	Office Machine Repair – Pre-Employment (1530)	96
Medical Insurance (439)	21	Office Management (462)	22
Medical Laboratory Procedures (633)	31	Office Practices and Procedures (624)	31
Medical Office Procedures (636)	31	Office Practices and Procedures (DMV-Clerk) (625)	31
Medical Terminology (639)	31	Office Procedures, Insurance (630)	31
Merchandising Problems, Current (517)	24	Office Procedures, Medical (636)	31
Metal Shop (1365)	83	Offset and Letterpress Printing –	
Mexican-American History and Culture (209)	14	Pre-Employment (1590)	97
Mexico, Archeology of (211)	14	Offset Presswork (1346)	82
Millinery (951)	52	Offset Stripping and Platemaking (1346)	82
Millwork, Current Cabinet Making and (1489)	94	Oil Painting (821)	44
Millwork, Cabinet Making and – Appr. (1013)	57	One-Parent Family, The (976)	54
Mineral Identification (164)	12	Opera and Operetta Workshop (1637)	100
Mineralogy (166)	12	Operating Room Technician (861)	48
Mineral Resources, Commercialization of (158)	12	Operations, Terminal (662)	32
Modern Literature (16)	2	Orchestra (1603)	98
Modern Marriage and the Family (974)	54		

Orientation of Personnel for Operations and Businesses (899)	50	PI – Introduction to Spanish (80)	6
Organ (1609)	98	PI – Modern Literature (16)	2
Outboard Motor Repair (1148)	69	PI – Personal Finance (370)	19
Painting, Airbrush (1192)	73	PI – Physiological Psychology (214)	14
Painting, Contemporary (818)	44	PI – Physiology (152)	11
Painting, Oil (821)	44	PI – Plane Geometry (112)	9
Painting, Water Color (824)	44	PI – Power Reading (30)	3
Paper Hanging (1168)	71	PI – Semantics (33)	3
Parent's Role in Child's Reading (965)	53	PI – Slide Rule, Mathematical Notation, and Measurement (115)	9
Passenger Travel and Reservation (672)	33	PI – Trigonometry (121)	10
PBX Switchboard Operation (645)	32	PI – United States Geography (199)	13
Personal Finance (370)	19	PI – United States Government (188)	13
Personal Management (476)	23	Piano – Advanced (1614)	98
Personal Traffic Safety (713)	36	Piano – Beginning (1614)	98
PERT and Critical Path Method (331)	18	Piano – Intermediate (1614)	98
Petro-Chemical Pipe Drafting (1196)	74	Plane Geometry (112)	9
Petroleum Processes (1431)	90	Planning and Controls, Production (495)	24
Philosophy and Society (212)	14	Plastics Fabrication, Thermoplastic (1401)	88
Photogrammetry, Basic Principles of (1235)	76	Plastics, Thermosetting (1404)	88
Photographic Equipment Repair (1341)	81	Play Production (243)	16
Photography (1331)	81	Playwriting Workshop (38)	3
Photography, Cinema (1337)	81	Plumbing – Appr. (1090)	66
Photography, Color (1334)	81	Plumbing, Building Codes 3 (1151)	69
Physical Education – Men (840)	46	Plumbing Code (1154)	70
Physical Education – Women (842)	46	Police Administration and Supervision (738)	37
Physical Science (146)	11	Police Information, General (736)	37
Physical Therapy Aide (864)	48	Police Law and Evidence (742)	37
Physics (149)	11	Police Report Writing (740)	37
Physiology (152)	11	Police Science – Enforcement Practices (746)	38
PI – Advanced Grammar and Composition (5)	1	Police Science – Home and Plant Protection (750)	38
PI – Algebra (91)	7	Police Science – Investigation (748)	38
PI – Applied Psychology (213)	14	Police Science – Penal Code (754)	38
PI – Arithmetic Review (92)	8	Police Science – Vehicle Code (744)	37
PI – Astronomy (160)	12	Political Problems (191)	13
PI – Basic Mathematics (94)	8	Pool Servicing, Commercial (1445)	91
PI – Business English (378)	20	Portraiture (815)	44
PI – Business Mathematics (385)	20	Power Brakes, Power Steering and (1141)	68
PI – Chemistry (134)	10	Power Reading (30)	3
PI – Economics (219)	15	Power Sewing – Single Needle (1479)	93
PI – English (1)	1	Power Sewing – Special Machines (1482)	94
PI – English Review and Reading Improvement (7)	2	Power Steering and Power Brakes (1141)	68
PI – First Aid (836)	46	Practical Mathematics (95)	8
PI – French (54)	4	Practices, Escrow (585)	27
PI – French Reading and Writing (55)	4	Practices, Real Estate (576)	27
PI – General Science (137)	10	Pre-Apprenticeship Plumbing (1153)	70
PI – German (60)	4	Precision Inspection (1371)	85
PI – Health and Hygiene (841)	46	Preparation for Kindergarten (958)	53
PI – High School Mathematics (97)	8	Preparation for Parenthood (955)	52
PI – Intermediate Grammar and Composition (5)	1	Pressure Vessel Code (1386)	86
PI – Introduction to Modern Mathematics (96)	8	Principles of Credit Union Management (468)	22
		Principles of Drama (240)	16

PI See page xxvi.

Principles of Management (456)	22	Refrigeration and Steam Plant Operation (1395)	87
Principles of Marketing (511)	24	Refrigeration Servicing (1295)	79
Principles of Traffic Management (661)	32	Regulation of Transportation (688)	34
Principles, Real Estate (561)	26	Religions, Comparative (220)	15
Principles of Storekeeping and Warehousing (401)	20	Remedial Education – Homemaking (926)	51
Printing – Composition (1343)	82	Remedial Reading (779)	41
Printing – Letter Presswork (1343)	82	Remodeling, Home Planning and (1172)	71
Produce Practices, Retail (538)	25	Report Writing (382)	20
Process Instrumentation (1294)	79	Reporting, Court (600)	29
Processing Milk Products (1437)	91	Residential or Income Property, Building (589)	27
Production Planning and Controls (495)	24	Retail Cashiering and Grocery Checking (535)	25
Production, Play (243)	16	Retail Produce Practices (538)	25
Property, Building Residential or Income (589)	27	Retailing, Mathematics of (532)	25
Property Descriptions, Real (565)	26	Retirement, Planning for (771)	39
Property Management (579)	27	Review of Hydraulic Problems – Open Channel Flow (1410)	88
Psychology, Applied (213)	14	Road Surveying, Advanced (1426)	89
Psychology, Business (477)	23	Roofing – Build-up and Composition – Appr. (1073)	64
Psychology, Sales (550)	26	Russian (78)	6
Psychology, Social (216)	15	Russian, Scientific (78)	6
Public Relations Management (471)	23	Sale, Textile Analysis and (529)	25
Public Speaking (231)	16	Sales and Management, Service Station (525)	24
Publication Art (1352)	82	Sales Institute (553)	26
Publication, Writing (36)	3	Sales Management (465)	22
Radiation, Health and Safety (706)	35	Sales Psychology (550)	26
Radio and Television Acting (246)	16	Sales, Real Estate (570)	26
Radio and Television Repair – Pre-Employment (1571)	97	Sales Speech (547)	26
Radio and Television Servicing (1299)	79	Sales, Transportation (697)	34
Radio Servicing (1296)	79	Salesmanship Practices (544)	25
Ramac 305 Machine, Electronic Computer Programming (329)	18	Sanitation, Food Handling and (880)	48
Rate Making and Adjustment Procedure (670)	33	Sanitation, Food Management and (882)	48
Rates, Motor (664)	32	Schematics, Electronic Fundamentals and (1272)	78
Rates, Rail (667)	32	School Bus Driver Training (718)	36
Reading Improvement, English Review and (7)	2	School Volunteer Training (982)	54
Reading Improvement, English Review and – Elementary (783)	41	Science, Fire (725)	36
Reading, Lip (27)	2	Science, General (137)	10
Reading, Power (30)	3	Science, Modern (143)	11
Reading, Remedial (779)	41	Science, Physical (146)	11
Real Estate Appraisal (567)	26	Sculpture (834)	45
Real Estate Investments (588)	27	Seamanship and Boat Safety (702)	35
Real Estate Finance (573)	27	Secretarial Procedures (642)	32
Real Estate Law (564)	26	Secretaries, Legal Procedures for (627)	31
Real Estate Practices (576)	27	Selling, Advanced (542)	25
Real Estate Principles (561)	26	Selling, Fundamentals of (541)	25
Real Estate Sales (570)	26	Selling Home Furnishings (526)	25
Real Property Descriptions (565)	26	Semantics (33)	3
Recital Practice, Song Coaching and (1633)	99	Serbo-Croatian (79)	6
Refinishing, Furniture and (1489)	94	Service Station Sales and Management (525)	24
Refrigeration and Air Conditioning (1392)	87	Service Station Selling and Service (1145)	69
		Sheet Metal Air Conditioning and Pattern Development (1200)	74

Sheet Metal – Appr. (1076)	65	Technical Illustration – Pre-Employment (1511)	95
Sheet Metal – Aircraft (1366)	84	Technical Writing and Editing (1355)	82
Sheet Metal Detailing (1203)	74	Techniques of Valve Analysis and Engineering (1429)	90
Sheet Metal Detailing, Journeyman (1206)	75	Techniques Used in Preschool Education (985)	54
Sheet Metal Layout and Development, Aircraft (1197)	74	Telephone Communications for the Deaf (1309)	80
Shipfitting (1384)	86	Television and Radio Acting (246)	16
Shipwright – Joiner and Boatbuilder (1497)	95	Television Servicing, Radio and (1299)	79
Shorthand Dictation (595)	28	Terminal Operations (662)	32
Shorthand Theory (591)	28	Terminology, Medical (639)	31
Shorthand Theory Review (593)	28	Textile Analysis and Sale (529)	25
Sign and Show-Card Painting (1351)	82	The Elementary School Age Child (960)	53
Simplification, Work (492)	24	The Junior High Age Child (969)	53
Slide Rule (115)	9	The Mentally Retarded Child (969)	53
Small Business Management (459)	22	The Physically Handicapped Child (970)	54
Social Psychology (216)	15	The Pre-school Child (956)	52
Society, Philosophy and (212)	14	The Senior High Age Child (961)	53
Sociological Aspects of Interviewing in Spanish (85)	7	Theater Arts Appreciation (40)	3
Solid Geometry (118)	10	Thermoplastic Plastics Fabrication (1401)	88
Song Coaching and Recital Practice (1633)	99	Thermosetting Plastics (1404)	88
Spanish (81)	6	Tool Design, Basic (1215)	75
Spanish Conversation (84)	7	Tool Design, Machine (1218)	75
Speaking, Public (231)	16	Topographic Mapping, Cadastral and (1233)	76
Speech, Advanced (234)	16	Tow-Truck Operators (1128)	67
Speech Correction (237)	16	Traffic Management, Principles of (661)	32
Speech Improvement, Accent Removal and (794)	42	Traffic Safety, Personal (713)	36
Speech, Sales (547)	26	Traffic Signal Circuitry (1292)	79
Spelling (778)	41	Transcribing Machines (352)	19
Standard First Aid – Red Cross (836)	46	Transistors (1311)	80
Steam Plant Operation (1451)	92	Transportation Economics (694)	34
Steam Plant Operation – Pneumatic Controls (1452)	92	Transportation Purchasing (698)	34
Steam Plant Operation, Refrigeration and (1395)	87	Transportation, Regulation of (688)	34
Stenoscript (616)	30	Transportation Sales (697)	34
Stenotype Dictation (612)	30	Travel Agency Management (466)	22
Stenotype Theory (609)	29	Trigonometry (121)	10
Stenotype Theory Review (615)	30	Trigonometry As Applied to Road Surveying (1426)	89
Still Life, Basic Art and (809)	43	Trigonometry, Industrial (109)	9
Storekeeping and Warehousing, Principles of (401)	20	Truck Driving and Safety (717)	36
Stress and Deflection, Introduction to (1435)	90	Trusts, and Estates, Laws of Wills – Estate Planning (447)	22
Supervision Fundamentals (480)	23	Typewriting (618)	30
Supervision Practices (482)	23	Understanding the Aged (774)	39
Supervisors, Communication for (498)	24	Understanding the Rapid Learner (968)	53
Surveying – Appr. (1079)	65	United States Government (188)	13
Surveying, Boundary (1425)	89	United States Government and World Affairs (197)	13
Surveying of Engineering Operation (1421)	88	United States History (186)	12
Swahili (86)	7	Upholstery (1476)	93
Swedish (87)	7	Upholstery – Pre-Employment (1506)	95
Swimming (850)	46	Ventilating, and Air Conditioning, Heating (1389)	86
Tax, Income (316)	17	Vocabulary Building (32)	3
Tax Planning for Small Business (318)	17	Vocational Guidance (223)	15
Technical Illustration (1191)	73	Vocational Rehabilitation (1457)	92

Vocational Rehabilitation – Elementary (784)	41
Voice 1 – Fundamentals of Singing (1631)	99
Voice 2 – Advanced (1631)	99
Volunteer Leadership (981)	54
Warehousing, Principles of Storekeeping and (401)	20
Water Color Painting (824)	44
Water Distribution System Practice (1449)	91
Ways of Mankind (217)	15
Welding – Acetylene (1374)	85
Welding – Arc (1377)	85
Welding, Electric and Gas – Pre-Employment (1580)	97
Welding – Inert Gas (1380)	86
Wills, Trusts, and Estates, Laws of – Estates	
Planning (447)	22
Woodworking (1486)	94
Work Simplification (492)	24
Workshop for Foster Parents (937)	55
World Affairs, United States Government and (197)	13
World Geography (200)	13
World History (204)	13
World Literature (19)	2
Writing and Editing, Technical (1355)	82
Writing, Police Report (740)	37
Writing for Publication (36)	3
Writing for Radio, Television, and Motion	
Pictures (39)	3
Writing, Report (382)	20
Zoning, Building Codes (1151)	69

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