

Central Texas College

Continental and Overseas Services

Europe



A Part of the American Educational Complex

1976-1978 Catalogue

**CENTRAL TEXAS COLLEGE
OVERSEAS, EUROPE**

**CATALOG
"1976 — 1978"**

**CENTRAL TEXAS COLLEGE — OVERSEAS,
EUROPE**

ACCREDITED BY

Southern Association of Colleges and Schools

APPROVED BY

Coordinating Board,
Texas College and University System
Texas Education Agency

Listed in

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GENERAL INFORMATION

The Catalog

The Catalog is an official bulletin of Central Texas College containing policies, regulations, procedures, and fees in effect as the publication went to press. The College reserves the right to make changes, at any time, to reflect current Board policies, administrative regulations, and procedures, amendments of state or federal laws, and fee changes when required.

Students are urged to study the contents of the catalog carefully, for they are responsible for observing the regulations contained therein.

Equal Opportunity Policy

Central Texas College has been held to be and presently is in compliance with the Title VI of the Civil Rights Act of 1964, as amended. With respect to the admission and education of students, with respect to the employment and promotion of teaching and non-teaching personnel, with respect to student and faculty activities conducted on premises owned or occupied by the College, and with respect to student housing situated on premises owned or occupied by the College. Central Texas College shall not discriminate either in favor of, or against, any person on account of his or her race, religion, ancestry, sex, national origin, or color.

Location of Campus

Central Texas College is a public two-year institution. The home campus is located on U.S. Highway 190 between Killeen, Texas and Copperas Cove, Texas. The population in a ten-mile radius of Killeen is estimated to be 125,000. The 560-acre campus is within minutes of streams and lakes in what is considered to be an outstanding recreation area.

Historical Background

The Central Texas College District was created in July, 1965, and composed of the Killeen Independent School District, The Copperas Cove Independent School District, and the Nolanville Common School District. The bond issue to construct and equip the plant followed in October, 1965. In January, 1966, the Board of Trustees employed the President of the College, and offices were opened in Killeen. The first several months were spent establishing the legal, financial, and academic framework for the College. Final plans and specifications for some of the buildings were completed in June and July of 1966 and construction of a Library Building, a Science Building, an Academic Classroom Building, a Technology Building, a Physical Education Building, an Administration Building, a Student Center and a Maintenance Technology Building was begun. A Telecommunications Building was added in 1967, two

dormitories were added in 1968, and in 1970 the Lady Bird Johnson Center for the Performing Arts was completed.

Nursing Facilities were completed in April, 1971. An additional dormitory was added in 1972. Fifty-two married student apartments were completed in the fall, 1974 semester. In the fall of 1975, the College opened a multimillion dollar Advanced Technology Building, and additional student recreational facilities are now provided. In December of 1974, a new 24 acre reservoir was completed adjacent to the educational facilities on the Central Texas College campus. The reservoir provides needed irrigation for the Farm and Ranch Program, and a controlled environment for a Science Department research project to measure the impact of various species and subspecies of black bass on area lakes.

Central Texas College opened its doors for the first time in September, 1967 and over 2,000 students enrolled to become the historic first student body. The College was tabbed by national news media as the "Cinderella Story." Enrollments at Central campus now average approximately 5,000 per semester.

In 1972, the Department of Defense invited Central Texas College to Europe to conduct the "Project Transition" program. From December, 1972 through May, 1974, Central Texas College provided job skill training for Army and Air Force personnel at thirteen sites in Germany and England. It trained more than 2,000 servicemen in Europe in five vocational-technical programs. In May, 1974, funding for Project Transition was discontinued by Executive Order. In January, 1974, Central Texas College was invited by the U.S. Military in Europe to offer the Associate Degree programs in technical fields. From that time to the present, Central Texas College has supported military educational goals of the United States Army in Europe and United States Air Force in Europe. In October, 1975, Central Texas College added course offerings for the United States Navy and Marines in Europe.

During 1976, Central Texas College expanded its Certificate and Associate Degree programs both in the United States and world-wide. In February, Central Texas College initiated a program at Fort Leonard Wood, Missouri and in April, Central Texas College Overseas opened its Far East Division with programs in the Republic of Korea. Programs with the US Navy in the Pacific were authorized in October, 1976.

Educational Philosophy

Central Texas College is dedicated to the philosophy that in a democracy, the well-being of the individual, as well as the whole of society, depends upon the sound moral and educational development of its people. Since education is an individual, evolutionary, and never-ending process, the College curricula are necessarily both flexible and extensive.

In order to insure the fullest service possible to the civilians of the surrounding area, to the personnel of the large military installation adjacent to the

home campus and to the personnel of military installations around the world, the educational programs of the College are geared to meet the needs of full-time as well as part-time civilian and military students. In order to accommodate the diverse educational needs of both the civilian and military sectors, Central Texas College necessarily provides an uncommonly greater variety of educational programs than might be expected. The objective of Central Texas College is to become a total learning environment, encompassing traditional and non-traditional forms of education. The guiding principle of the total learning environment is the College's commitment to meet the real educational needs of all the people. The College proposes to make available in its total environment the opportunity to succeed in life, which is the birthright of every American. This is why Central Texas College is dedicated "to the service of all people . . ."

Educational Objectives

1. UNIVERSITY TRANSFER EDUCATION — The College provides the first two years of college work for those students planning to achieve a baccalaureate or higher degree.
2. GENERAL EDUCATION — The College provides general educational courses which will develop competence, skills, and attitudes essential to effective performance as an individual, as a citizen, and as a productive member of society. Within this academic framework are studies in communication and languages, social sciences and humanities, mathematics, and physical and social development, as well as a program of co-curricular activities.
3. OCCUPATIONAL EDUCATION — The College provides courses which qualify students in vocational and/or technical fields, and equips them for occupational competency.
4. AREA SERVICE — The College provides life-long education for adults, opportunities for cultural enrichment, special interest courses, lectures, and meetings designed to satisfy the special needs of business, of the military and of area groups.
5. PERSONAL GUIDANCE — The College provides guidance services which will enable the student to select with proper perspective the educational program that is compatible with his abilities, aptitudes, and ambitions.
6. PLACEMENT — The College provides a Student Placement Center on the home campus to assist graduating students and alumni in bringing their qualifications to the attention of possible employers. Students who expect to receive an Associate Degree or a Certificate of Completion at the end of the fall, spring, or summer semesters, and wish to register for this service may register with the Placement Office.

Correspondence should be addressed as follows:

Placement Office
Central Texas College
Highway 190 West
Killeen, Texas USA 76541

The Servicemen's Opportunity College

Central Texas College is one of nearly 300 colleges and universities recognized as Servicemen's Opportunity College (SOC) institutions. The SOC is a network of colleges whose goal is to provide service personnel with educational opportunities. Members of SOC are selected on the basis of exhibiting college policies and procedures which meet both the educational needs of military personnel and the exigencies of service. Such institutions are not limited to those serving at local posts or bases nor those serving the military overseas. Each SOC college or university cooperates with other members of the network to lessen the impact of required mobility on the military student. Admission policies, transfer of credits, residency requirements, liberal recognition of credit for military education or experience, all of which were obstacles to educational ambitions of members of the military forces in the past, are coordinated in a general framework of cooperation to aid in the military student's program completion.

The college recognizes that educational needs of service personnel are unique and that their education is often acquired through non-traditional methods. College credit can be granted for validated education acquired by non-traditional methods. Among the non-traditional methods of earning credits applicable toward a degree at Central Texas College are:

- A. American College Testing Program
- B. College Board Admission Testing Program
- C. College Level Examination Program
- D. College Level General Educational Development Testing Program
- E. Credit for Military Schools Attended
- F. Credit for Physical Education for Military Service
- G. Evaluated Credit for Civilian and/or Military Occupational Training Experience
- H. Institutional Course Challenge Examinations
- I. USAFI and/or DANTES Course and Subject Standardized Tests
- J. Non-Commissioned Officer Academy

Central Texas College accepts credits earned at other institutions of higher learning and accredited technical schools which are applicable to the degree program of the student. Through various combinations of these modes of non-traditional learning and transfer credits, a student may earn the major portion of required credits for an Associate Degree. A minimum of 12 hours must be compiled through traditional methods with a 2.00 (C) grade point average with Central Texas College (either main campus, extension centers or overseas) but not necessarily the last 12 hours of course work.

Establishment of Credit

TRADITIONAL

Transfer of Credit — Transfer of credit from accredited colleges and universities may be accepted when the grade earned was "C" or better and the course applies to the student's curriculum. In certain cases, the grade of "D" may be accepted if the overall grade point average of the credits to be transferred is a 2.0 and the course is not a course in the student's major or a support course for the student's major; i.e., an elective not related to the major of the student.

Correspondence Study/Extension Courses — Central Texas College Overseas-Europe does not grant transfer credit for courses from non-accredited proprietary institutions offering correspondence and/or extension courses. However, it does accept for transfer correspondence course credit offered by accredited institutions holding membership in the National University Extension Association.

NON-TRADITIONAL

Credit by means other than traditional course enrollment may be assigned to the student's permanent record when education is evaluated to numerical course equivalent. The methods of obtaining such credit are explained on the following pages.

Credit by Examination

Credit by Examination has become a widely accepted means of obtaining college credit. There are many testing programs available to military personnel, several of which are administered by Military Education Centers overseas. Those testing programs which are accepted by Central Texas College are explained below. A more detailed explanation of each of these programs is found in the *Central Texas College Manual for the Evaluation of Non-Traditional Educational Experience*.

The awarding of credit by examination by Central Texas College must meet the following general criteria:

1. The student must have earned twelve (12) semester hours by traditional methods through Central Texas College with a minimum 2.00 (C) grade point average on a 4.0 system.
2. The test score being evaluated must fall within the range of scores accepted by Central Texas College for each category of tests.
3. The subject matter covered by the test must equate in content to a specific Central Texas College course required for degree completion.
4. Application for any credit by examination must be made within the specified time limitation.
5. Credit cannot be granted on the basis of test scores for a course in which the student has been previously or is presently enrolled.
6. Test scores must be provided on official score report forms.

The test programs acceptable at Central Texas College and the specific criteria of each program follow:

1. THE AMERICAN COLLEGE TEST (ACT)

Application for credit must be made within five (5) years following the testing date. The policy of granting credit based on ACT scores went into effect Sept., 1974, and it is not retroactive for scores dated prior to Sept., 1974. This is the only test approved by Central Texas College which awards a grade and grade points.

<i>Minimum ACT Test</i>	<i>Score</i>	<i>Central Texas College Course</i>	<i>Grade</i>
English	22	Engl. 131 Composition and Rhetoric	B
English	24	Engl. 131 Composition and Rhetoric	A
English	26	Engl. 132 Composition and Rhetoric	B
Mathematics	27	Math. 131 Intermediate Algebra	A
Natural Science	28	Biol. 141 General Biology	A

2. COLLEGE BOARD ADMISSION TESTING PROGRAM (SAT)

Application for credit must be made within five (5) years following the testing date. The policy of granting credit based on SAT scores went into effect Sept., 1974, and it is not retroactive for scores dated prior to Sept., 1974. Credit only is granted. If a student has repeated testing, the highest score rather than the most recent will be evaluated. Scores taken previous to student's twelfth (12) grade will not be used in awarding credit.

<i>Minimum SAT Test</i>	<i>Score</i>	<i>Central Texas College Course</i>	<i>Grade</i>
English	550	Engl. 131 Composition and Rhetoric	
Mathematics	550	Math. 131 Intermediate Algebra	

THE COLLEGE BOARD ACHIEVEMENT TESTS (ACH) and THE COLLEGE BOARD ADVANCED PLACEMENT PROGRAM (APP) are accepted at Central Texas College. The specific criteria for these testing programs are in the Central Texas College Evaluation Manual cited above.

3. COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

Application for credit must be made within six (6) years following the test date. The College Level Examination Program offers two types of tests: *General Examinations* covering five basic areas of the liberal arts. *Subject Examinations* measuring achievement in specific college level courses. The criteria for evaluating the General Examination are below. The criteria for evaluating the Subject Examinations are found in the Central Texas College Evaluation Manual cited above. Credit only is awarded.

<i>Minimum General Exam</i>	<i>Score</i>	<i>Central Texas College Course</i>	<i>Grade</i>
English Composition I	427	English 131 & 132 Composition and Rhetoric	
Social Sciences History II	422	History 134 and Soc. 231 History of Western Civil. Introduction to Sociology	
Natural Sciences III	422	Biology 141 and Geology 141 General Biology Physical Geology	
Humanities IV	422	Art 138 or Engl. 233* Hist. & Appreciation of Art World Literature	
Mathematics V	424	Math 131 & Math 133 Intermediate Algebra Trigonometry	

*Credit for Engl. 131 and Engl. 132 must be earned prior to receiving credit.

4. USAFI and/or DANTES COURSES AND SUBJECT STANDARDIZED TESTS

The United States Armed Forces Institute (USAFI) was replaced in 1974 by The Defense Activity for Non-Traditional Education Support (DANTES). DANTES maintains USAFI records. Application for credit from Central Texas College for USAFI or DANTES tests or courses must be made within six (6) years following the test date.

USAFI & DANTES Subject Standardized Tests (SST) — Results are reported as percentiles, and credit is awarded when the examinee attains a percentile of 20 or above.

USAFI Courses —

End of Course Tests — Credit is awarded when the examinee has achieved a rating of S (Satisfactory) or D (with Distinction).

Subject Examinations — Credit is awarded when the examinee has achieved a rating of S (Satisfactory.)

A list of those SST's and USAFI Courses for which Central Texas College has an equivalent course is found with the specific course awarded in the Central Texas College Evaluation Manual cited previously.

5. INSTITUTIONAL CHALLENGE EXAM

A Student may request, in writing to the Director of Student Services, permission to take a challenge examination. The student will be sent an application for challenging a course which must be returned to the Business Office with a twenty-five dollar (\$25) non-refundable challenge fee. The student is then notified of the time and place to take the examination. Failure to show for the examination will result in the loss of challenge fee. Students are not permitted to receive credit by examination in courses for which they are presently or have been previously enrolled.

General Policy Regarding Evaluation of Military Education and Experiences

The process of evaluation of military education and experience is widely misunderstood. No institution is able to grant credit toward completion of the programs of any other institution. That is, an evaluation of military education and experience grants credit only toward the fulfillment of a program within the single institution granting the credit. Central Texas College cannot offer assurance to any student that the credit granted for his or her military education and experience may be transferred directly into other programs or other institutions.

The Central Texas College Overseas—Europe evaluation process is necessarily divided into two phases, each of these having its special purposes:

1. *Field Evaluation.* When a student registers initially, he or she should contact the counselor at the Education Center for a field evaluation of military education and experience. While this evaluation does not grant credit, it can help the student avoid taking courses in which he or she has already mastered the course content.
2. *Official Evaluation.* When a student has completed 12 semester hours of course work through traditional methods with Central Texas College with a minimum of a 2.00 (C) grade point average in a single program of the institution, he or she may request an Official Evaluation and Certificate or Degree Plan. Forms are available from the CTC Re-

gistrar. Forms should be submitted to the Director of Student Services, Central Texas College Overseas—Europe, APO New York 09165. Several conditions must exist before the official evaluation is rendered.

- a. All official transcripts of work in previous institutions, including high school, must have been received directly from those institutions.
- b. Twelve semester hours of work through traditional methods with Central Texas College in a single program must have been completed with a grade point average of 2.00 (C) or better.
- c. The Form DD 295, signed by an authorized representative of the Education Center, must have been received.
- d. The student must have initiated a request via a CTC Request for Official Evaluation and Certificate or Degree Plan.

When all documents are received and evaluated at the Hanau headquarters, the student folder is officially completed by the granting of credit for his or her military education and experience, and the remaining requirements for the certificate or degree are set forth. Students may complete the requirements at Central Texas College (Overseas or Central Campus) or in other institutions when they return to the United States. In general, the policy is that all evaluations of military education are the responsibility of the Director of Student Services.

Grades and Point Average

Grading at Central Texas College is as follows:

Numerical

Value	Grade
90-100	A —Superior (4 points per semester hour)
80-89	B —Above Average (3 points per semester hour)
70-79	C —Average (2 points per semester hour)
60-69	*D —Passing, but Unsatisfactory (1 point per semester hour)
	**F —Failure (0 points per semester hour)
	***I —Incomplete
	****W —Withdrawn
	*****N —No Credit

*Students who receive a "D" grade are advised not to enroll in the next course for which this course was a prerequisite.

**The grade of "F" may be given for academic failure or for nonattendance.

***An incomplete grade may be given only in those cases where, because of personal illness, death in the immediate family, school sponsored trips, or military orders, the student is unable to complete the final examination for a course, complete a term paper or project, and prior notice with documentation has been given to the instructor regarding these circumstances. In awarding the grade of "I" the instructor may set a deadline for completing the remaining course requirements; in no case will the deadline exceed 90 days after the scheduled end of the class.

NOTE: In calculating the grade-point average for graduation or other purposes the "I" grade is calculated as an "F" unless course requirements are met within this specified period.

The instructor makes the final decision concerning the granting of the Incomplete. In recording the grade of "I", the instructor states on a grade report the quality of the student's work to date, the requirements remaining, and the deadline for completion. It is the responsibility of the student, not of the Education Center nor of Central Texas College Overseas-Europe, to arrange with the instructor for the assignment of work necessary to complete the course and change the "I" grade. A student should realize that it is virtually impossible to remove a grade of "I" subsequent to his transfer out of the European Theater. An "I" cannot be removed by the mark of "W". If the student elects to repeat the course, he must register, pay the full fees and repeat the entire course.

****If a student officially withdraws from Central Texas College he will be given a grade of "W".

*****The grade of "N" is normally reserved for those students enrolled in non-traditional, modular, self-paced courses who have made satisfactory progress, but lack the completion of certain modules required for course completion. The grade of "N" indicates that the student must enroll the following semester and complete those modules for a final grade in the course. Re-enrollment requires the payment of normal tuition and fees for the course.

The grade point average of any student at any point may be determined by dividing the hours accumulated by the student in courses for which he received a grade other than "W", "I", or "N" into the total accumulated quality points for those courses. In the case of repeated courses, both hours and quality points for these courses will be considered in the final grade point average.

The student attending college with the military tuition assistance, tuition aid, or VA benefits should acquaint himself or herself with the requirements and possible obligations incurred, particularly upon receiving a grade of "F", "I", "W", or "N".

CHANGE OF GRADES

Should a student feel that there has been a computational error in regard to the grade received for a course, he or she must immediately contact and consult the instructor for that course. If the instructor finds that an error has been made, the administrative offices must be notified by the instructor in the properly authorized manner. Neither administrative personnel of Central Texas College Overseas—Europe nor the Regional Department Manager is authorized to change an instructor's grade. It is the responsibility of the student to contact the instructor in regard to this matter.

Repeating A Course

If a student repeats a course in which he or she has already earned a passing grade, the subsequent attempt will not increase the total hours earned toward a degree. The latter grade will be used in computing the final grade point average for graduation.

Courses Out Of Sequence

Certain courses offered by Central Texas College require foundation courses as prerequisites. A student who takes the advanced course first will not be granted credit for the prerequisite course should it be studied subsequently.

REQUIREMENTS FOR ADMISSION

Students who hold diplomas from accredited secondary schools or GED equivalency certificates may enter Central Texas College upon the presentation of certified credentials. Students transferring from another college will be accepted if they are eligible to return to the transferring institution. Veterans and military personnel, as well as students of mature years who have not had the opportunity to complete a high school course, but who, by reason of special attainments, are prepared to undertake post high school work, may be admitted to certain areas of study if, in the judgement of College officials, such training will be of value to the student.

SPECIAL NOTE: Personnel not sponsored in the overseas command by the U.S. Armed Forces are not normally permitted to attend Central Texas College Overseas—Europe classes. Proof of this sponsorship is generally accepted as being one of the Identity Cards issued by the Armed Forces for active duty personnel, their dependents and certain civilians. Other applicants may attend classes but must be referred to the Educational Services Officer for necessary military and intragovernmental approval prior to being permitted to file application for admission.

FIELD REGISTRAR

Central Texas College Overseas—Europe assigns a Field Registrar to each Education Center where a program is conducted. Information on registration, term dates, evaluations, programs offered, and related questions should be directed to the local Central Texas College Overseas—Europe Field Registrar in the local Education Center.

PROCEDURES FOR ADMISSION

Registration Periods

Central Texas College Overseas—Europe conducts an academic year beginning late in August and ending in July. It is based on five eight-week terms, but varies considerably in differing locations to meet military schedules. Course lengths are four, six, eight, ten and twelve weeks. The Education Center publicizes registration dates, term dates, and course offerings. Varying course lengths or the special needs of the community may alter the generally established registration periods at a given site.

Registration Requirements

Official registration with Central Texas College Overseas—Europe is required before any student may begin coursework. The following items must be completed before the student will be officially registered:

1. Application for Admission
2. Class Registration Card
3. Processing of Tuition Assistance or Veteran's Administration forms (if applicable)
4. Payment of fees and tuition

All forms necessary for admission are available from the Central Texas College Field Registrar at each site.

ADDING COURSES/CHANGING COURSE ENROLLMENTS

Students wishing to enroll for additional courses or to change course enrollments after registering must have the Field Registrar indicate such amendments on the registration card. Such changes must be completed before the announced end of registration.

WITHDRAWALS

Any student who desires to or must withdraw from a course must submit an Application for Withdrawal/Refund. The withdrawal form must be signed by the student, the instructor, and the Education Service Officer. If a student withdraws from a course because of reasons other than official military duties which prevent attendance in the class, he or she may be obliged to repay any Tuition Assistance or VA benefits received as payment for course costs.

A student who fails to withdraw officially will automatically receive an "F" on the instructor's Final Grade Roll, and will lose any refund to which he or she would normally be entitled.

Withdrawal is prohibited after the conclusion of the course. Field Registrars or Education Center personnel will give information or furnish applications to any student seeking to withdraw.

REFUNDS

The refund policy applies to tuition only. All refunds for students who are members of the military will be computed from the date the Application for Withdrawal/Refund is filed at the local Education Center (not from the date of the last class attended) according to the following schedule:

1. If not more than one-eighth of the class meetings have elapsed at the time the withdrawal form is filed, the college will refund 75% of the tuition.
2. If one-eighth to one-quarter of the class meetings have elapsed at the time the withdrawal form is filed, 25% of the tuition will be refunded.
3. If more than one-quarter of the class meetings have elapsed at the time the withdrawal form is filed, no tuition will be refunded. Refunds will be processed upon receipt at CTCO-E Student Services Office, of the properly completed application for Withdrawal/Refund form.

TUITION AND FEES

Checks, money orders, or postal notes should be made payable to Central Texas College. Because of military regulations, no cash is accepted. Central Texas College Overseas/Europe requires payment of tuition and applicable fees prior to attendance of the first class meeting according to the following schedules:

Tuition

ARMY: \$40 per semester hour, \$20 Lab Fee for all lab courses. Definition of lab courses are those courses in which lab hours equal or exceed lecture hours.

AIR FORCE: \$40 per semester hour for non-lab courses and \$64 per semester hour for lab courses. Definition of lab courses are those courses in which lab hours equal or exceed lecture hours.

OTHER BRANCHES OF SERVICE: Tuition and Fees for other services will be determined by the service which provides educational support (Air Force or Army), i.e., Navy tuition at London, England, will be calculated using Air Force rate.

ARMY	SEMESTER HOURS	NON LAB COURSES	*LAB COURSE**
	1	\$ 40.00	\$ 60.00
	2	80.00	100.00
	3	120.00	140.00
	4	160.00	180.00
	5	200.00	
	6	240.00	**IMPORTANT: Table applies for registration in one laboratory course only.
	7	280.00	
	8	320.00	EXAMPLE: If a student enrolls in 2 lab courses, one of 3 semester and one of 4 semester hours, the
	9	360.00	
	10	400.00	
	11	440.00	

12	480.00	table should be used individually for each lab course. In this case the 3 semester hour course would be \$140 the 4 semester hr. course would be \$180.00. The total tuition due would be \$320.
13	520.00	
14	560.00	
15	600.00	

AIR FORCE	SEMESTER HOURS	NON LAB COURSES	*LAB COURSES
	1	\$ 40.00	\$ 64.00
	2	80.00	128.00
	3	120.00	192.00
	4	160.00	256.00
	5	200.00	320.00
	6	240.00	384.00
	7	280.00	448.00
	8	320.00	512.00
	9	360.00	576.00
	10	400.00	640.00
	11	440.00	704.00
	12	480.00	768.00
	13	520.00	832.00
	14	560.00	896.00
	15	600.00	960.00

*Lab Courses — are defined as courses which have lab hours that equal or exceed lecture hours.

Fees

Matriculation Fee — \$15.00 — not refundable except when the course is cancelled by the College or the student withdraws prior to the first class meeting. Due from each student registering for the first time with CTC.

Institutional Challenge Examination Fee — A Fee of \$25.00 for each challenge examination should accompany the Application for Examination.

Certificate Fee — A fee of \$5.00 is payable at the time a student applies for a Competency Certificate or a Proficiency Certificate or Certificate of Award Level I or II.

Degree Fee — A fee of \$10.00 is payable at the time a student applies for a Degree.

Transcript Fee — A fee of \$1.00 is charged for each transcript issued.

Returned Check Charge — A charge of \$5.00 is made for checks which have been returned.

TRANSCRIPT

A student's records are considered to be confidential in the personal sense (not as a military security matter). Therefore, it is necessary to have a request signed by the student before one or more transcripts can be released. Forms for requesting transcripts are available at Education Centers. An *official* (embossed) transcript may be sent only to the officials of an accredited institution. Unofficial (information) copies may be sent as desired by the student. Graduates are automatically issued an unofficial transcript free of charge.

The fee for all other transcripts is \$1.00 each, which should accompany the written request. Requests for transcripts should be addressed as follows: Director of Student Services, Central Texas College, APO New York 09165, and should include the student's full name, social security number, date of birth, and first and last dates, month and year, the student attended classes in the Overseas Division, as well as the complete address to which the transcript is to be sent.

Records of each student participating in the Overseas Division are maintained in Hanau until Central Texas College Overseas—Europe is informed by the student, in writing, that he has returned to the United States. Then the permanent record is transferred to the Killeen, Texas, campus registrar.

STUDENT FINANCIAL AID

GI BILL: Central Texas College Overseas—Europe is an approved college for those who wish to attend and receive benefits under the Veterans Readjustment Benefits Act.

TUITION ASSISTANCE: Many military personnel, whether or not eligible to participate under the Veterans Readjustment Benefits Act, may wish to attend Central Texas College Overseas—Europe under the Tuition Assistance Program, which pays for 75% of Tuition.

(Department of Defense Appropriations Act of 1966, P.L. 89-213)

PROCEDURES FOR OBTAINING FINANCIAL AID

Information and application forms for military Tuition Assistance and VA benefits are available at military Education Centers. The two forms of financial aid are not part of the same program and students interested in using such aid should be aware of the liabilities which each incurs to the student.

TUITION ASSISTANCE

Active duty military students (approved) under this program will have 75% of tuition costs paid by the government, but will be responsible for paying the remaining 25% as well as all fees and book costs.

Students who receive aid under Tuition Assistance incur a liability to the government, depending on grade. Each recipient should make sure that he or she is informed of all conditions of the Tuition Assistance agreement. Information about such conditions may be obtained at the military Education Center.

ARMY AND AIR FORCE

Both the Army and the Air Force have Tuition Assistance programs. The Army Tuition Assistance form is DA 2171, and the Air Force form is AF 1227. Air Force students attending classes at an Army site and Army students attending classes at an Air Force site should complete the appropriate service form and mail it to the appropriate Army or Air Force Education Center. The signature of the student's unit commander (or authorized representative) and the approving signature of the local education Services Officer are required on all forms. The Field Registrar will assist students in this matter, as local procedures may vary.

NAVY

Each applicant for Navy Tuition Assistance is required to complete a Tuition Assistance application — NAVEDTRA 1560/1 (2-74), which is to be forwarded through the student's Commanding Officer (for endorsement in accordance with BU PER SINST 1560.10c) to the Command Office, U.S. Naval Station, Attn: ADPT, FPO NY 09690. It is important that all navy students submit their requests for tuition assistance promptly, since requests received after the end of the term in question are automatically subject to disapproval. Students should understand that in the event tuition aid requests are disapproved by the Navy, they must personally pay Central Texas College Overseas—Europe for the balance of tuition.

MARINES

Each Marine Corps applicant for tuition assistance is required to complete a Request for Tuition Aid, which is to be forwarded through the student's Commanding Officer (for endorsement in accordance with Marine Corps Order 1560.1A) to the agency having funding authority for the activity concerned. For students enrolled with the Overseas Division, this agency is either the Headquarters Battalion in Washington, D.C., or the Marine Corps Department at FPO 09521 (Naples) or FPO 09510 (London).

DEPARTMENT OF ARMY CIVILIAN (DAC)

The DAC applicant must, in conjunction with his employer, prepare and seek approval of AE Form 1069 (Request for Approval of Trainees, Non-

Government Facilities) and DA Form 14115 (Purchase Request and Commitment). Upon completion, these forms are hand carried by the applicant to the local Finance Office for confirmation of availability of funds. The Finance Office will then forward these forms to the appropriate procurement center.

No student will be considered paid-in-full until the completed Tuition Assistance form — with all required signatures — and the correct amount of money for remaining costs have been received by the Field Registrar. (Payment must be made by check or by money order.)

Should a student be taking courses at more than one site, only one Tuition Assistance form will be initiated, and only one check or money order accepted for the balance due from the student.

ACADEMIC POLICIES

Resident Credit

Since both instructors and courses in the Overseas Division meet the same academic standards as on the home campus, overseas courses carry the same resident credit as that earned for home campus courses. Thus, a student may earn an Associate Degree entirely through study in the Overseas Division or in combination with study in other Central Texas College divisions and at the home campus, as long as twelve semester hours are earned by formal study under Central Texas College auspices.

TRANSFER OF CREDITS FROM CTCO-E TO OTHER COLLEGES

Central Texas College is accredited by the Southern Association of Colleges and Schools. Credits earned at Central Texas College Overseas-Europe will transfer to other institutions in accordance with standard practices and degree requirements of the other institutions.

CLASSIFICATION OF STUDENTS

Freshman

A student with thirty semester hours or less recorded on his or her permanent record will be classified as a freshman.

Sophomore

A student with thirty-one semester hours or more recorded on his or her permanent record will be classified as a sophomore.

Maximum Hours for Transfer

As a general rule, senior colleges will accept a maximum of sixty-six (66) semester hours of transfer credit from junior colleges. A student should not take more than this number of hours with the objective of transfer of credit unless he secures written permission from the chosen senior college.

ACADEMIC STANDARDS

To avoid being placed on scholastic probation, a student must maintain a 1.8 semester grade point average. A student whose grade point average is below 1.8 will be placed on probationary status and must achieve a minimum 1.8 semester grade point average during the next semester or term enrolled to have this status removed. Failure to achieve this average in the next semester enrolled will result in the suspension of the student for one semester. Upon readmission after suspension, the student will again be under scholastic probation for one semester, during which time the student must earn a minimum 1.8 semester average. Failure to meet standards after readmission will result in suspension for two regular semesters, or terms. To qualify for graduation, all students must achieve a 2.0 cumulative grade point average. Students should also realize that any course grade below "C" is normally not transferable.

Any Central Texas College Overseas-Europe student failing to achieve a 1.0 grade point average during any given term will be immediately suspended from the College for one regular term and will be placed on academic probation when readmitted to the College.

COURSE NUMBERS

The unit of credit for Central Texas College Overseas-Europe is the semester hour. Course numbers contain three digits. If the first digit reading from the left is a "1" it indicates a freshman level course. If the first digit is a "2" it indicates a sophomore level course. The second digit indicates the semester hour value of the course. The third digit indicates the recommended order in which the course is to be taken.

STUDENT RESPONSIBILITIES

Class Behavior

Generally, students attending Central Texas College Overseas-Europe are in class for intense personal and professional reasons. To facilitate instruction and learning, students are expected to maintain a mature, earnest, and interested attitude in the classroom. The college will not tolerate student behavior which disrupts the class or which attempts to discredit the instructor, the

course material, or other students. Students who seek to disrupt classes, or discredit the course or other students, will be asked to cease such disruptions. If the student fails to do so, he or she will be dropped from the class with a grade of "F"

SCHOLASTIC HONESTY

All students are required and expected to maintain the highest standards of scholastic honesty in the preparation of all course work and in examinations. The following will be considered examples of scholastic dishonesty and should be avoided.

1. Plagiarism — The taking of passages from writings of others without giving proper credit to the sources.
2. Collusion — (a) using another's work as one's own, or (b) working together with another person in the preparation of work unless such joint preparation is specifically approved in advance by the instructor.
3. Cheating — giving or receiving information on examinations, as well as using such information during examinations.

Students guilty of scholastic dishonesty will be dropped from the course with a grade of "F"

TEXTBOOKS

Textbooks may be purchased from the Field Registrar during the registration period. This period is normally two weeks prior to the class starting date and during the first week of classes. After the registration period, students may obtain textbooks by sending a check or money order in the amount of the textbook plus ten percent for handling and shipping to: Central Texas College Overseas-Europe, APO New York 09165, Attn: Book Department.

ABSENCES AND TARDINESS

Students are required to attend classes regularly. No unexcused absences or "cuts" are allowed. You are responsible for all class work covered during an absence from class, even in cases where you were able to satisfy the instructor that the absence was unavoidable. Failure to attend class regularly may result in administrative withdrawal of a student from a class or from College. This type of non-attendance withdrawal results in the student receiving a grade of F. Under these conditions a student attending the class under Tuition Assistance or Veterans Administration aid may be required to pay back a part or all of the tuition aid. Excusable absences are those resulting from personal illness, emergencies arising within the family, official school-

sponsored trips (approved by the Dean), and military duties or orders requiring brief absences.

Students are expected to be in class on time.

The following specific rules apply to absences:

- a. Each instructor shall keep a record of class attendance and shall determine when a student's absence is excused.
- b. An administrative drop is initiated by the instructor after a student has six consecutive or ten unexcused absences. The instructor will record the grade "F" in Column 1 and "Non-Attendance" in Column 4 of the Final Class Report. Absences are computed on class hours of instruction. *Example:* A class meeting for 1½ hours results in 1½ absences.
- c. The Executive Dean, CTCO-E, will not grant excuses for absences. Students may be readmitted to class by the Executive Dean, CTCO-E; however, absence(s) will remain unexcused.

Regardless of the nature of absence, students are responsible for all work covered during their absence. Students attending on-duty classes are reminded that unexcused class absences may result in disciplinary action by the unit commander, as the student may be considered absent without leave in such case.

GRADUATION EXERCISES

Central Texas College Overseas-Europe will hold one consolidated graduation exercise annually for recipients of certificates and degrees. Degrees will be issued twice a year for students who, by virtue of their military duties or other valid reasons, are unable to attend the graduation exercise.

GRADUATION WITH HONORS

Candidates for degrees from Central Texas College may graduate with HIGHEST HONORS or HONORS based upon the following criteria:

1. To graduate with HONORS a candidate must have a 3.5 grade point average on a 4.0 scale with no grade below "B" on all course work taken.
2. In computing the candidate's grade point average, the grades in all courses taken at Central Texas College Overseas-Europe and all courses taken at other accredited institutions of higher learning are included.

3. In any graduating class the student with the highest grade point average above 3.5 and no grade below "B" will be designated as graduating with HIGHEST HONORS.

ACADEMIC LOAD

Students are responsible for determining the academic load they can master during each term. Some students may be intent upon completing a degree within a short period of time, and they may try to take as many courses as are offered in their area. One course, or three to four semester hours, is considered a normal course load for an adult student who is fully employed, since approximately 12 hours a week are needed for study outside the classroom.

DEGREES CONFERRED

The Board of Trustees of Central Texas College, realizing the possibility that a student may take the majority of his coursework at one educational area and then, because of military orders or other circumstances beyond his control, complete his degree requirements at a second educational unit, has authorized each educational unit to process applications for the degrees of Associate in Arts, Associate in Science, Associate in Applied Science, and Associate in General Studies.

DEGREE REQUIREMENTS

Associate in Arts

Complete a minimum of sixty-one hours which must include:

1. Twelve semester hours of English
 2. Six semester hours of American History
 3. Six semester hours of American Government
 4. Two years of foreign language or one year of foreign language and one year of science
 5. Four semesters of Physical Education
 6. Psychology 111
 7. A minimum of eighteen semester hours of sophomore courses
 8. A minimum of twelve semester hours credit earned anywhere within the Central Texas College system
 9. Have a minimum overall grade-point average of 2.0 ("C" average)
 10. Meet all other college requirements
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Associate in Science

Complete a minimum of sixty-six semester hours which must include:

1. Twelve semester hours of English
2. Six semester hours of American History
3. Six semester hours of American Government
4. Four courses of Science
5. Six semester hours of Math
6. Four semesters of Physical Education
7. Psychology 111
8. A minimum of fifteen semester hours of sophomore courses
9. A minimum of twelve semester hours credit earned anywhere within the Central Texas College system
10. Have a minimum overall grade-point average of 2.0 ("C" average)
11. Meet all other college requirements

Courses taken in Developmental Studies may not be used to satisfy degree requirements.

Associate in General Studies

Complete a minimum of sixty-one semester hours in courses chosen from the total curricular offerings of the College. Selections should include courses from the social sciences, humanities, communications, and sciences and may include courses from the vocational and technical curricula. A minimum overall grade-point average of 2.0 ("C") is required. A minimum of twelve semester hours must be completed at Central Texas College.

Associate in Applied Science

The Associate in Applied Science Degree will be awarded to students who meet curricular requirements in a number of technology programs. The number of semester hour requirements vary according to the curriculum involved. A minimum overall grade-point average of 2.0 ("C") is required. A minimum of twelve semester hours must be completed in traditional study at Central Texas College.

CERTIFICATES CONFERRED

Since the duty of military personnel normally prohibits them from a full-time student status the College provides indicators of progress toward the Associ-

ate Degree in the form of certificates. The College presents the Certificate of Award at two levels, 15 hours and 30 hours, to indicate skills obtained by the student through coursework as outlined in the career program chosen by the student.

The student is eligible to receive the 15 hour Certificate of Award upon completion of 15 semester hours of credit in one program area. Nine of these hours must be taken with Central Texas College by traditional (classroom) methods. An additional 15 semester hours of credit in the same program area of study will qualify the student for the 30 hour Certificate of Award. Previously, the Certificate of Competency and Certificate of Proficiency were awarded for completion of prescribed courses of study of approximately the same lengths as the Certificates of Award. Students registered under the provisions of previous catalogs may apply for either type of award, but not both at the same level (that is, not a Certificate of Award, Level I and also a Certificate of Competency). Holders of the lower certificate may apply for either advanced certificate, using credit previously applied to the first certificate awarded.

REQUIREMENTS FOR CERTIFICATES

Certificate of Award Level I

1. Minimum of 15 semester hours in same Associate Degree Program.
2. Minimum of 9 semester hours taken with CTC (in Class).

Certificate of Competency

1. Minimum of 15 semester hours taking the courses indicated "***" (previous catalog notation) in the same Degree Program.

Certificate of Award Level II

1. Meet requirements of Level I or Competency above.
2. Minimum of 15 semester hours additional credit in the same Degree Program Plan.

Certificate of Proficiency

1. Meet requirements of Level I or Competency above.
2. Minimum of 15 semester hours comprised of courses indicated "***" (previous catalog notation) in the same Degree Program.

ANNOUNCEMENT OF PROGRAMS

Programs are listed alphabetically. The student should become familiar with the information given below regarding the various programs, their requirements and course descriptions.

TERM OFFERINGS

Some courses offered within a major program will be available in a major geographic area in a frequent pattern. Other courses, due to a high specialization, may not be offered as frequently. The student should check with the local Education Center for advance scheduling.

CURRENT PROGRAMS

The following programs listed are those approved by the Texas Education Agency and the Board of Trustees, Central Texas College. Not all programs are available at all locations. Individuals interested in programs listed herein that are not locally available should consult with their local Education Services Officer or Field Registrar.

AIR CONDITIONING AND REFRIGERATION

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
AC 140	Air Conditioning & Refrigeration Theory & Application	4	AC 142	Household Refrigeration	4
			AC 143	Heating Systems	4
			AC 144	Residential Air Conditioning	4
AC 141	Basic Electrical Circuits	4	DD 130	Blueprint Reading	3
WELD 146	Welding Fundamentals	4			
TMTH 130	Technical Mathematics	3			
PSYC 111	Psychology of Personal & Social Development	1			
		16			15

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
AC 241	Control Theory and Application	4	AC 243	Commercial Air Conditioning Systems	4
AC 242	Commercial Refrigeration Systems	4	AT 145	Automotive Air Conditioning	4
DD 134	Blueprint Reading	3	MGMT 136	Human Relations	3
BUS 131	Introduction to Business	3	ENGL 239	Technical Writing	3
ENGL 137	Business English	3			
		17			14

COURSE DESCRIPTIONS FOR AIR CONDITIONING AND REFRIGERATION

AC 140 Air Conditioning and Refrigeration Theory and Application

(2-4) Credit: 4

This course deals with the basic physical principles of an air conditioning system. Introduction to heat, heat movement, temperature, pressure, refrigerants, temperature pressure relationship to refrigerants, the refrigeration cycle, the major components of refrigeration systems and their relationship to each other. Introduction to the basic electrical devices found in air conditioning systems, i.e., motors, controls, etc. Use of special air conditioning tools and equipment, soldering and welding equipment. The use and care of specialized electrical testing and recording instruments is stressed.

AC 141 Basic Electrical Circuits

(2-4) Credit: 4

Instruction in basic electricity and its application. Introduces the student to the various electrical devices, their importance in electrical circuits, including those used in residential wiring. Methods of wire connections for new and repair service, making and testing electrical circuits and the use of electrical measuring and testing equipment.

AC 142 Household Refrigeration Systems

(2-4) Credit: 4

Application of the refrigeration cycle to household refrigeration, including refrigerators, home freezers, and window air conditioning units. Instruction in service procedures for locating and correcting problems in the mechanical and electrical systems of units. Trouble shooting, repairing and charging refrigeration equipment. Development of shop skills in the use of special refrigeration tools and equipment.

AC 143 Heating Systems

(2-4) Credit: 4

The study of types of heating equipment and their application. Service procedures for locating and correcting problems in heating systems. Study of manufacturers information on various heating units and equipment to enable the student to determine proper installation.

AC 144 Residential Air Conditioning

(2-4) Credit: 4

Instruction in heat transfer through material, heat loss and heat gain calculations for residential heating and air conditioning systems, equipment selection and locations, duct sizing and layout, controls and control circuits, installation and service procedures.

AC 241 Control Theory and Application

(2-4) Credit: 4

Instruction in the operation of control devices, how they can be applied and varied to achieve the designed conditions. Includes interpretations and drawings of schematic and pictorial control circuit diagrams.

AC 242 Commercial Refrigeration Systems

(2-4) Credit: 4

Types of commercial refrigeration units and systems. Instruction in controls and control circuits in commercial refrigeration. Heat loss and heat gain calculations for commercial applications, equipment selections, locating and piping procedures. Instruction in installation and service procedures for different systems.

AC 243 Commercial Air Conditioning Systems

(2-4) Credit: 4

A course designed to cover heat transfer, heat loss and heat gain calculations as applied to commercial heating and air conditioning. Psychrometrics of conditioned air, duct design and layout, equipment selection and location, shop drawings, controls and control circuits for automatic conditioning of air.

RELATED COURSES

- AT 145 Automotive Air Conditioning** (2-4) Credit: 4
A course designed to provide an understanding of the principles, design, construction, installation, and service procedures involved in auto air conditioning, with special emphasis on system re-charging and compressor service.
- BUS 131 Introduction to Business** (3-0) Credit: 3
Provides overall picture of business operation; includes analysis of specialized fields within business organizations; identifies role of business in modern society.
- DD 130 Blueprint Reading** (2-2) Credit: 3
The fundamentals of blueprint reading and sketching as they apply to machine drawing.
- DD 134 Blueprint Reading** (3-3) Credit: 3
The fundamentals of blueprint reading for the construction trades. This course includes familiarization with standard terms, sizes, scales, estimating and commercial practice.
- ENGL 137 Business English** (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: sentence analysis; punctuation; paragraphing; planning.
- ENGL 239 Technical Writing** (3-0) Credit: 3
The writing of technical reports and business letters.
- MGMT 136 Human Relations** (3-0) Credit: 3
The study of "Human Relations" as an emerging scientific discipline of study in which basic concepts and principles concerning man at work are emphasized. It is structured to explain the "whys" and "wherefores" of the behavior of industrial man.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.
- TMTH 130 Technical Mathematics** (3-0) Credit: 3
A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.
- WELD 146 Welding Fundamentals** (2-4) Credit: 4
Electric, oxy-acetylene welding and torch cutting. Making fusion welds in all positions with both the electric and oxy-acetylene welding. Using the hand cutting torch and cut-a-line cutting machine. (Special industrial application.)

APPLIANCE SERVICE AND REPAIR

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
APPR 141	Introduction to Major Appliances	4	APPR 142	Resistance Heating Appliances	4
ET 141	Direct Current Circuits	4	ET 142	Alternating Current Circuits	4
ET 144	Basic Test Equipment	4	DD 130	Blueprint Reading	3
TMTH 130	Technical Mathematics	3	ENGL 137	Business English	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			
		17			15

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
APPR 241	Motor Driven Appliances I	4	APPR 242	Motor Driven Appliances II	4
APPR 243	Air Conditioning and Refrigeration I	4	APPR 244	Air Conditioning and Refrigeration II	4
APPR 245	Microwave Cooking Devices I	4	APPR 246	Microwave Cooking Devices	4
ET 135	Assembly Methods	3	APPR 248	Small Appliance Servicing	4
ELECTIVE	Approved Elective	3	ELECTIVE	Approved Elective	3
PE	Physical Education	1	PE	Physical Education	1
		19			20

Electives must be approved by appropriate college officials.

COURSE DESCRIPTIONS FOR APPLIANCE SERVICE AND REPAIR

APPR 141 Introduction to Major Appliances (2-4) Credit: 4
This course covers an introduction to the theory and application of the different types of major appliances. Practical shop application, safety procedures, use of power and hand tools, test instruments, and use of repair manuals are also included.

APPR 142 Resistance Heating Appliances (2-4) Credit: 4
This course covers the theory, repair procedures and trouble shooting techniques on heaters, baking ovens and other types of resistance heating appliances. Prerequisite: APPR 141.

APPR 241 Motor Driven Appliances I (2-4) Credit: 4
This course covers the theory and application of home laundry units. Practical experiences include service procedures on the repair of automatic washing machines and both gas and electric clothes dryers. Prerequisite: APPR 141.

APPR 242 Motor Driven Appliances II (2-4) Credit: 4
This course covers the theory of operation of home type automatic dishwashers, garbage disposals and trash compactors. Practical experiences include service procedures in the repair of these appliances. Prerequisite: APPR 241.

- APPR 243 Air Conditioning and Refrigeration I** (2-4) Credit: 4
This course covers the basic theory of the refrigerant cycle and the theory of the operation of all home type refrigeration appliances. Practical experiences include service procedures on freezers, refrigerators, ice-making machines, domestic air conditioners and other refrigeration related appliances.
- APPR 244 Air Conditioning and Refrigeration II** (2-4) Credit: 4
This course covers the basic theory of self-contained and remote controlled condensing units, low and medium temperature walk-in boxes, store fixtures and other commercial refrigeration units. Practical experiences include service procedures in the repair of these appliances. Prerequisite: APPR 243.
- APPR 245 Microwave Cooking Devices I** (2-4) Credit: 4
This course covers the theory of operation of microwave cooking devices. Practical experiences include service procedures in the repair of these appliances. Special consideration is given to safety precautions on these devices.
- APPR 246 Microwave Cooking Devices II** (2-4) Credit: 4
This course is a continuation of APPR 245 — Microwave Cooking Devices I. Prerequisite: APPR 245.
- APPR 248 Small Appliance Servicing** (2-4) Credit: 4
This course covers the theory of operation of toasters, hair dryers, electric knives and other small repairable appliances. Practical experiences include service procedures in the repair of these appliances.

RELATED COURSES

- DD 130 Blueprint Reading** (2-2) Credit: 3
The fundamentals of blueprint reading and sketching as they apply to machine drawing.
- ENGL 137 Business English** (2-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: sentence analysis; punctuation; paragraphing; planning.
- ET 135 Assembly Methods** (2-3) Credit: 3
A study of modern assembly methods and practices used in industry, including the design, layout, and construction of electronic apparatus.
- ET 141 Direct Current Circuits** (3-3) Credit: 4
A study of the elementary principles of electronics, including DC circuits as related to series and parallel resistive, capacitive, and inductive networks, and the use of Ohm's Law, Kirchoff's Laws and the power formulas in analyzing these networks.
- ET 142 Alternating Current Circuits** (3-3) Credit: 4
A study of single and polyphase AC circuits and the use of Kirchoff's Laws as well as Thevenin's, Norton's and Superposition Theorems in analyzing these circuits. Prerequisite: ET 141 or equivalent.
- ET 144 Basic Test Equipment** (3-3) Credit: 4
The use, theory of operation, and repair of the basic electronic test equipment ranging from the VOM through the Dual Beam Oscilloscope.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

TMTH 130 Technical Mathematics

(3-0) Credit: 3

A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.

AUTOMOTIVE BODY REPAIR**FIRST YEAR**

First Semester			Second Semester		
Subject		Hours	Subject		Hours
AB 141	Shop Practices	4	AB 144	Frame Straightening	4
AB 142	Body & Frame Construction	4	AB 145	Body Finishing	4
AB 143	Roughing & Alignment	4	AB 146	Painting	4
WELD 146	Welding Fundamentals	4	AB 147	Body Repair	4
PSYC 111	Psychology of Personal & Social Development	1			—
		17			16

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
AB 241	Upholstery & Vinyl Top Repair	4	AB 242	Glass, Electrical & Power Accessory Service	4
AT 143	Brakes & Steering	4	AB 243	Management & Estimating	4
ENGL 137	Business English	3	AT 145	Automotive Air Conditioning	4
TMTH 130	Technical Mathematics	3	ENGL 239	Technical Writing	3
		14			15

COURSE DESCRIPTIONS FOR AUTOMOTIVE BODY REPAIR**AB 141 Shop Practices**

(2-4) Credit: 4

This course is an introduction to shop safety methods (OSHA) and practices in the modern body shop, proper use of hand and power tools and precision measuring devices.

AB 142 Body and Frame Construction

(2-4) Credit: 4

A course designed to provide an understanding of body frame construction of both conventional and unit bodies. Special emphasis will be placed on repair equipment and procedures to diagnose, repair and align collision-damaged frames.

AB 143 Roughing and Alignment

(2-4) Credit: 4

A course designed to provide an understanding of roughing and shaping procedures on automotive sheet metal necessary to make satisfactory body repairs with special emphasis on alignment of component parts such as hoods, doors, fenders, etc.

AB 144 Frame Straightening

(2-4) Credit: 4

A course designed to provide the student with a working knowledge of the types of body frame, misalignment, frame alignment and straightening and the use of special equipment and measuring devices.

AB 145 Body Finishing

(2-4) Credit: 4

A course designed to provide an understanding of the use of body fillers, metal preparation, finishing to the original contour and paint preparation.

AB 146 Painting

(2-4) Credit: 4

A course designed to provide a working knowledge of the sanding, masking, cleaning of material to be painted; the proper use of the paint gun; pattern settings; spraying techniques and the uses of exotic paint materials. The course also covers paint problems, such as blistering, wrinkling, bleeding and blushing.

AB 147 Body Repair

(2-4) Credit: 4

A course designed to provide an understanding of body sheetmetal repair with emphasis on the use of body materials and replacement of body parts including glass, hardware and trim.

AB 241 Upholstery and Vinyl Top Repair

(2-4) Credit: 4

A course designed to provide the student with a knowledge of upholstery and head lining service and the recovering, repair of vinyl and convertible tops.

AB 242 Glass, Electrical and Power Accessory Service

(2-4) Credit: 4

A course designed to provide the student with a knowledge in all types of glass and weathersealing devices and service, and various types of power assist repair.

AB 243 Management and Estimating

(2-4) Credit: 4

A course designed to provide the student with the experiences of body shop management as it pertains to facilities, personnel, cost accounting, purchasing and stocking of supplies. The student will also receive instruction in collision repair estimation and the use of flat rate and material manuals.

RELATED COURSES

AT 143 Brake and Steering Systems

(2-4) Credit: 4

A course designed to provide an understanding of the theory of operation and service procedures involved in the brake system. The use of the brake drum lathe, shoe grinder, bleeder and other equipment necessary to effect brake repairs will be taught with emphasis on power brake and dual braking systems. The theory of operation, adjustment and overhauling of various types of steering and suspension systems utilizing the front end alignment unit and other equipment necessary for complete steering service.

AT 145 Automotive Air Conditioning

(2-4) Credit: 4

A course designed to provide an understanding of the principles, design, construction, installation, and service procedures involved in auto air conditioning, with special emphasis on system re-charging and compressor service.

ENGL 137 Business English

(3-0) Credit: 3

Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: sentence analysis; punctuation; paragraphing; planning.

ENGL 239 Technical Writing

(3-0) Credit: 3

The writing of technical reports and business letters.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

TMTH 130 Technical Mathematics (3-0) Credit: 3
A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.

WELD 146 Welding Fundamentals (2-4) Credit: 4
Electric, oxy-acetylene welding and torch cutting. Making fusion welds in all positions with both the electric and oxy-acetylene welding. Using the hand cutting torch and cut-a-line cutting machine. (Special industrial application.)

AUTOMOTIVE SERVICE AND REPAIR

FIRST YEAR

First Semester				Second Semester			
Subject		Hours		Subject		Hours	
AT 141	Automotive Engines	4		AT 144	Fuel Systems	4	
AT 142	Automotive Electrical Systems	4		AT 145	Automotive Air Conditioning	4	
AT 147	Brakes	4		AT 146	Engine Diagnosis and Emission Control	4	
MGMT 137A	Safety (OSHA)	3		TMTH 130	Technical Mathematics	3	
PSYC 111	Psychology of Personal & Social Development	1					
		<hr/>				<hr/>	
		16				15	

SECOND YEAR

First Semester				Second Semester			
Subject		Hours		Subject		Hours	
AT 241	Transmissions & Differentials	4		AT 244	Transmissions II & Power Trains	4	
AT 242	Shop Organization & Management	4		ELECTIVE	Technical Elective	6	
AT 148	Steering Systems	4		WELD 146	Welding Fundamentals	4	
MGMT 136	Human Relations	3		BUS 131	Introduction to Business	3	
		<hr/>				<hr/>	
		15				17	

TECHNICAL ELECTIVES: AT 261; ENGL 137

COURSE DESCRIPTIONS FOR AUTOMOTIVE SERVICE AND REPAIR

AT 141 Automotive Engines (2-4) Credit: 4
A course designed to provide an understanding of the fueled internal combustion engine with emphasis on the operation, maintenance, and overhaul of the power plant and its component parts and systems. The proper use of hand tools, measuring tools, and other equipment necessary to effect repairs or rebuilding of the engine with established procedures and proper testing equipment. A special emphasis will be placed on the servicing of the valve train.

AT 142 Automotive Electrical Systems

(2-4) Credit: 4

A course designed to provide the student with an understanding of the ignition, starting, charging circuits; also alternators, voltage and amperage regulating systems, with special emphasis on testing equipment and electrical skills, in accordance with industry established standards.

AT 144 Fuel Systems

(2-4) Credit: 4

A course designed to provide an understanding of the theory, fundamentals of operation, and construction of the various types of carburetors, fuel pumps and components of the fuel system, using established procedures, measuring tools, hand tools, and special testing equipment for testing and adjusting overhauled carburetors.

AT 145 Automotive Air Conditioning

(2-4) Credit: 4

A course designed to provide an understanding of the principles, design, construction, installation and service procedures involved in auto air conditioning, with special emphasis on system re-charging and compressor service.

AT 146 Engine Diagnosis and Emission Control

(2-4) Credit: 4

A course designed to provide an understanding of engine trouble-shooting procedures, utilizing the oscilloscope analyzer and the theory of operation, adjustment, diagnosis, and repair of all types of emission control devices.

AT 147 Brake Systems

(2-4) Credit: 4

A course designed to provide an understanding of the nomenclature, theory of operation, service procedures involved in the brake system. The use of the brake drum lathe, shoe grinder, bleeder, and other equipment necessary to effect brake repairs will be taught, with emphasis on power brake and dual braking systems.

AT 148 Steering Systems

(2-4) Credit: 4

A course designed to provide an understanding of the construction, theory of operation, adjustments, and overhauling of various types of steering and suspension systems, utilizing the front end alignment unit and other equipment necessary to effect repairs of these systems.

AT 241 Transmissions and Differentials

(2-4) Credit: 4

A course designed to provide an understanding of the function, construction, operation, and maintenance of all types of transmissions and differentials with special emphasis on automatic transmissions and post-traction differentials. Disassembly, assembly, and adjustment of the components will be done in accordance with established procedures utilizing special tools and equipment necessary to effect repairs.

AT 242 Shop Organization and Management

(2-4) Credit: 4

A course designed to provide information and actual experience in shop management, customer relations, warranty provisions, service salesmanship, organization and layouts, general business practices, and in the use of time, rates and parts manuals. This course places special emphasis on established business principles and preparation for employment.

AT 243 Automotive Machine Shop

(2-4) Credit: 4

A course in automotive machine shop practices with emphasis on block and cylinder head milling, valve seat replacement, block and cylinder head crack detection, valve guide service, and precision valve service. Prerequisites: AT 141, AT 143.

AT 244 Transmission II and Power Trains

(2-4) Credit: 4

A course designed to supplement course AT 241 and to provide a further understanding of the overhaul procedures and practices of automatic transmissions. Included in this course is a study of drive shaft, universal joints, constant velocity joints, and front wheel drive systems and their service requirements.

AT 261 On-Campus Automotive Shop Practice (1-15) Credit: 6
A course designed to provide occupationally related classroom instruction experiences, and service jobs on live automobiles in the Central Texas College automotive shop.

RELATED COURSES

BUS 131 Introduction to Business (3-0) Credit: 3
Provides an overall picture of business operation; includes analysis of specialized fields within business organizations; identifies role of business in modern society.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study; Sentence analysis; punctuation; paragraphing; planning.

MGMT 136 Human Relations (3-0) Credit: 3
A study of "Human Relations" as an emerging scientific discipline of study in which basic concepts and principles concerning man at work are emphasized. It is structured to explain the "whys" and "wherefores" of the behavior of industrial man.

MGMT 137A Safety (OSHA) (3-0) Credit: 3
A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

TMTH 130 Technical Mathematics (3-0) Credit: 3
A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.

WELD 146 Welding Fundamentals (2-4) Credit: 4
Electric, oxy-acetylene welding and torch cutting. Making fusion welds in all positions with both the electric and oxy-acetylene welding. Using the hand cutting torch and cut-a-line machine. (Special industrial application.)

BROADCAST ELECTRONICS

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
ET 131	Technical Math I	3	ET 132	Technical Math II	3
ET 135	Assembly Methods	3	ET 142	Alternating Current Circuits	4
ET 141	Direct Current Circuits	4	ET 143	Introduction to Electron Devices	4
ET 144	Test Equipment	4	TV 149	Television Theory & Servicing	4
ENGR 131	Engineering Graphics	3	ENGL 137	Business English	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			
		19			19

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
ET 244	Solid State Devices	4	ET 247	Communications Circuits II	4
ET 245	Communications Circuits I	4	ET 233	Special Intensive Study	3
CM 241	Digital Circuits	4	ELECTIVE	Technical Elective	3-4
ENGL	Approved English	3	ELECTIVE	Technical Elective	4
PE	Physical Education	1	PE	Physical Education	1
		16			
					15-16

Technical Electives to be chosen from: OA 138, TV 146, ET 234, ENGL 239, ET 242, ET 246, ET 248 and TV 249

COURSE DESCRIPTIONS FOR BROADCAST ELECTRONICS

- ET 131 Technical Math I** (3-0) Credit: 3
A study of the basic concepts of math and algebra and the use of the slide rule and the electronic calculator in their manipulation.
- ET 132 Technical Math II** (3-0) Credit: 3
A study in the solution of trigonometric problems through the use of tables, slide rule, and electronic calculator. Prerequisite: ET 131 or equivalent.
- ET 135 Assembly Methods** (2-3) Credit: 3
A study of modern assembly methods and practices used in industry, including the design, layout, and construction of electronic apparatus.
- ET 141 Direct Current Circuits** (3-3) Credit: 4
A study of the elementary principles of electronics, including DC circuits as related to series and parallel resistive, capacitive, and inductive networks, and the use of Ohm's Law, Kirchoff's Laws and the power formulas in analyzing these networks.
- ET 142 Alternating Current Circuits** (3-3) Credit: 4
A study of single and polyphase AC circuits and the use of Kirchoff's Laws as well as Thevenin's, Norton's and Superposition Theorems in analyzing these circuits. Prerequisite: ET 141 or equivalent.

- ET 143 Introduction to Electron Devices** (3-3) Credit: 4
An introduction to vacuum tubes, transistors, and other semiconductors, their composition, characteristics, theory of operation and circuit applications.
- ET 144 Basic Test Equipment** (3-3) Credit: 4
The use, theory of operation, and repair of the basic electronic test equipment ranging from the VOM through the Dual Beam Oscilloscope.
- ET 233 Special Intensive Study** (0-3) Credit: 3
An intensive study in the design, theory of operation, and construction technique used in a field which holds special interest to the student. Prerequisite: Approval of the appropriate college official for registration.
- ET 234 Broadcast Equipment Maintenance** (1-6) Credit: 3
The operation, preventive maintenance procedures, and trouble shooting of modern day radio and television broadcast equipment. The course gives the student that much needed practical experience that can only be gained in a live station atmosphere. Prerequisite: ET 245 or equivalent.
- ET 242 Advanced Test Equipment** (3-3) Credit: 4
The use and calibration of Test Equipment used in servicing complex electronic hardware. Observation of wave forms of electronic apparatus. Prerequisite: ET 144 or equivalent.
- ET 244 Solid State Devices** (3-3) Credit: 4
The study of the solid state devices used throughout the industry, their characteristics and relations to circuits in both low and high frequency application. Prerequisite: ET 143 or equivalent.
- ET 245 Communications Circuits I** (3-3) Credit: 4
A study of those basic circuits used throughout industry today. Prerequisite: ET 143 or equivalent.
- ET 246 Integrated Devices** (3-3) Credit: 4
A basic study of the many types of IC's in use today. The course will include digital, linear, and LED type devices.
- ET 247 Communications Circuits II** (3-3) Credit: 4
A study of communications circuits necessary for the successful acquisition of an FCC first class license. Prerequisite: ET 245, or equivalent.
- ET 248 Industrial Electronic Control Circuits** (3-3) Credit: 4
A study of special purpose electronic control circuits and systems as applied by industry today. This course will include theory and operation, maintenance, diagnostic trouble shooting, and repair of these special purpose circuits. Prerequisite: ET 142, or equivalent.

RELATED COURSES

- CM 241 Digital Circuits** (3-3) Credits: 4
A review of the basic gates and gating networks used in digital circuits, and an intensive study of Boolean Algebra, as well as the theory and operation of flip-flop, registers, and counter circuits. The course also covers numbering systems, arithmetical circuitry, and control element circuitry.
- ENGL 137 Business English** (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.

- ENGL 239 Technical Writing** (3-0) Credit: 3
The writing of technical reports and business letters.
- ENGR 131 Engineering Graphics** (2-4) Credit: 3
Freehand and instrument drawing, dimensioning, fastening, pictorial methods, charts, and graphs, projection drawings, geometry of graphical construction, graphical design. Required for beginning Engineering students.
- OA 138 Business Correspondence** (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.
- TV 145 Electronic Communications Fundamentals** (3-3) Credit: 4
Course covers those basic electrical and electronic fundamentals and circuits used in modern applications, such as communications, sound, and test equipment.
- TV 146 Sound Systems** (3-3) Credit: 4
A fundamental course covering the components, specifications, and installation techniques of sound reinforcement, public address, paging and sound distribution systems.
- TV 149 Television Theory and Servicing** (3-3) Credit: 4
A study of electron tube and semiconductor circuits peculiar to television receivers and practical methods for trouble-shooting and servicing. Prerequisite: TV 145, or equivalent.
- TV 249 Advanced Television Servicing** (3-3) Credit: 4
The operation and service of the more complicated television receiver circuits are covered in this course. Special attention is given to the use of techniques and equipment for the most economical solutions to difficult problems. Includes an introduction to transistorized and color television. Prerequisite: TV 149.

DRAFTING AND DESIGN

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
DD 131	Engineering Graphics	3	DD 143	Machine Drawing	4
DD 132	Advanced Drafting	3	DD 232	Descriptive Geometry	3
DD 133	Technical Illustration	3	DD 244	Structural Drafting	4
TMTH 130	Technical Mathematics	3	ENGL 137	Business English	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1	ELECTIVE	Approved Elective	3
ELECTIVE	Approved Elective	3			18
		17			

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
DD 235	Air Conditioning & Pipe Drafting	3	DD 234	Principles of Design	3
DD 242	Architectural Drafting I	4	DD 246	Industrial Practice	4
DD 243	Electronic Drafting	4	DD 247	Architectural Drafting II	4
PE	Physical Education	1	PE	Physical Education	1
ELECTIVE	Approved Elective	3	ELECTIVE	Approved Elective	3
<hr/>			<hr/>		
15			15		

APPROVED ELECTIVES may be chosen from: DD 130, DD 134, MATH 131, MATH 132, MATH 133, ENGL 131, ENGL 132, MT 143, ART 131. Others by permission of appropriate college official.

COURSE DESCRIPTIONS FOR DRAFTING AND DESIGN

DD 130 Blueprint Reading (2-2) Credit: 3

The fundamentals of blueprint reading and sketching as they apply to machine drawing.

DD 131 Engineering Graphics (2-4) Credit: 3

Freehand and instrument drawing, dimensioning, fastening, pictorial methods, charts and graphs, projection drawings, geometry of graphical construction. Required for beginning engineering students. This course is a prerequisite for all drafting courses except DD 130 and DD 134.

DD 132 Advanced Drafting (2-4) Credit: 3

A course mainly concerned with pictorials. Includes the theory of oblique and isometric drawings. Also covered are one and two point perspectives of shade and shadow application. Prerequisite: DD 131.

DD 133 Technical Illustration (2-4) Credit: 3

Introduction to pictorial drawings as used in industrial catalogs, assembly sheets, newspaper publications, and promotional literature. Work to be done in various media to include pencil, ink, transfer tapes, and air brush. Prerequisites: DD 131 and DD 132.

DD 134 Blueprint Reading (3-3) Credit: 3

The fundamentals of blueprint reading for the construction trades. This course includes familiarization with standard terms, sizes, scales, estimating and commercial practice.

DD 143 Machine Drawing (2-4) Credit: 4

Drawing and manufacturing processes; training in producing various kinds of advanced drawings; commercial practices, and economics; the use of standard parts, sizes, symbols, and abbreviations. Prerequisites: DD 131 and DD 132.

DD 232 Descriptive Geometry (2-4) Credit: 3

Involves point, line and plane relationships, auxiliary views, intersections, and flat pattern development. Emphasis is placed on practical solutions to realistic engineering problems relating to aerospace, mining and geology. Prerequisite: DD 131.

DD 234 Principles of Design (2-2) Credit: 3

Theory and practice of design as related to engineering and technology. Analysis in the areas of architecture, machine design, structural design, and product development. Prerequisites: DD 131, DD 132, and DD 133.

DD 235 Air Conditioning and Pipe Drafting (2-4) Credit: 3
Design and detailing of air conditioning equipment and duct work; design and detailing of pipe systems making use of standard practices and symbols; includes single line, double line, plan profile and isometric drawings of duct and pipe systems. Prerequisites: DD 131 and DD 232.

DD 242 Architectural Drafting I (2-4) Credit: 4
A study of the preparation of architectural plans; elevations; sections; site plans; various building details; room finish, door, and window schedules; and structural drawings. Prerequisite: DD 131.

DD 243 Electronic Drafting (2-4) Credit: 4
A study of layout and preparation of finished electronic and electrical drawings, stressing modern representation used for pictorial drawings; wiring and connection diagrams; printed circuits; control circuits; and schematic diagrams. Some review of lettering and mechanical drawing principles. Prerequisite: DD 131.

DD 244 Structural Drafting (2-4) Credit: 4
A study of A.I.S.C. specifications and standards; structural theory and data; designing and detailing structural members and connections. Design and development of details and specifications for light industrial structures to include structural steel, pipe, and reinforced concrete rods. Prerequisite: DD 131.

DD 246 Industrial Practice (2-4) Credit: 4
NOTE: Must be taken during last semester of sophomore year.
This course is designed to give specialized practice to the student in his major field of interest. The student will complete actual jobs for area industries to gain realistic experience in his chosen career.

DD 247 Architectural Drafting II (2-4) Credit: 4
Drawing for small commercial buildings, and multi-story residential designs with steel and concrete detailing. Prerequisite: DD 242.

RELATED COURSES

ART 131 Freehand Drawing (2-4) Credit: 3
A study of the basic drawing skills, including both abstractions and expressive drawing in charcoal, pencil, pen, wash, conte crayon and mixed media.

ENGL 131 Composition and Rhetoric (3-0) Credit: 3
Composition of short papers, with emphasis on sentence structure, paragraph development, and paper organization. Analysis of expository prose.

ENGL 132 Composition and Rhetoric (3-0) Credit: 3
An introduction to literature: The short story, poetry, drama, and the novel. Composition of short papers with emphasis on interpretation and analysis of literary selections, optional research paper. Prerequisite: ENGL 131, or advanced standing.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communications. Word study: Sentence analysis; punctuation; paragraphing; planning.

MATH 131 Intermediate Algebra (3-0) Credit: 3
Includes a brief review of fundamental algebraic operations, linear equations, systems of linear equations, determinants, quadratic functions, inequalities, exponential functions, logarithmic functions. Prerequisite: MATH 130, or equivalent.

MATH 132 College Algebra

(3-0) Credit: 3

Includes consideration of quadratic functions, systems of quadratic equations, quadratic inequalities, matrices, binomial theorem, exponential functions, sequences, progressions, series, and applications. Prerequisite: MATH 131, or equivalent.

MT 143 Machine Shop Practice

(2-4) Credit: 4

Theory and practice in basic metal working, hand and machine tool operation and maintenance. Includes related instruction in blueprint reading and precision measurement.

PSYC 111 Psychology of Personal and Social Development

(1-0) Credit: 1

Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

TMTH 130 Technical Mathematics

(3-0) Credit: 3

A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.

ENVIRONMENTAL CONTROL

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
EC 131	Water and Waste Water Technology	3	EC 135	Environmental Control	3
EC 133	Solid Waste Management	3	EC 136	Chemical & Tertiary Waste Water Treatment	3
EC 243	Water and Waste Water Chemistry	4	EC 144	Pest Control	4
TMTH 130	Technical Mathematics	3	ENGL 137	Business English	3
PHYS 140	Survey of Physics	4	BIOL 144	Microbiology	4
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			
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SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
EC 221	Pollution Abatement Seminar	2	EC 222	Pollution Abatement Seminar	2
EC 231	Air Pollution	3	EC 233	Instrumentation	3
EC 232	Industrial Waste Control	3	EC 234	Water Quality Control	3
GOVT 231	State & Federal Government	3	ENGL 239	Technical Writing	3
MGMT 137A	Safety (OSHA)	3	ELECTIVE	Approved Elective	3
PE	Physical Education	1	SPCH 233	Business Speech	3
		<hr/> 15	PE	Physical Education	1
					<hr/> 18

EC 132 — Aquatic Biology may be substituted for EC 135.

BUS 231 — Principles of Economics — MATH 137 — Business Mathematics, or another course approved by appropriate college official may be substituted.

COURSE DESCRIPTIONS FOR ENVIRONMENTAL CONTROL

- EC 131 Water and Waste Water Technology** (3-0) Credit: 3
A study of method of disease transmission, hygienic excreta disposal, municipal and industrial waste water collection and treatment, characteristics of water, water treatment, protection of ground water, insect and rodent control, solid waste collection and disposal, milk and food sanitation, swimming pool sanitation, and industrial hygiene.
- EC 132 Aquatic Biology** (2-3) Credit: 3
A study of fresh water as an environment, its physical and chemical characteristics, and characteristics of plant and animal communities which inhabit it. The morphology, life history and taxonomy of fresh water aquatic organisms. (Field trips required.)
- EC 133 Solid Waste Management** (3-0) Credit: 3
Types of solid waste, physical and chemical method of handling solid waste, possibilities of re-cycling, (re-using) solid waste material.
- EC 135 Environmental Control** (1-3) Credit: 3
A course in the basic techniques of lab analysis that are required under present state and federal regulations for the supervision and control of waste water treatment.
- EC 136 Chemical and Tertiary Waste Water Treatment** (3-1) Credit: 3
A course in the fundamental methods of water and waste water treatment with emphasis on the use of chemicals and plant equipment operation and maintenance.
- EC 144 Pest Control** (3-1) Credit: 4
This course covers the fundamental principles of pest identification and control. A study of pesticides, application of pesticides, the operation and maintenance of pesticide equipment and a survey of safety regulations included in state and federal legislation are included.
- EC 221 Pollution Abatement Seminar** (2-0) Credit: 2
Particular problems involving pollution and control in our environment are to be presented and discussed by students in oral reviews. The "how, why and what-to-do" aspects of pollution are to be stressed.
- EC 222 Pollution Abatement Seminar** (2-0) Credit: 2
A continuation of EC 221.
- EC 231 Air Pollution** (2-3) Credit: 3
Sources of air pollution — industrial, municipal, automotive, physical and chemical nature of air pollutants. Laboratory techniques for detecting air pollutants. Control and treatment of air pollution.
- EC 232 Industrial Waste Control** (2-3) Credit: 3
Company policies, organization problems, legal responsibilities in waste control; investigations into possible regional pollution, and preventive tactics that could be employed.
- EC 233 Instrumentation** (2-3) Credit: 3
An elementary study of hydraulic, pneumatic, mechanical, electronic control systems and components. It includes a basic description, analysis, and explanation of instrumental controls for a waste water plant. Typical performance characteristics, accuracy, and application of instruments are studied.

EC 234 Water Quality Control

(2-3) Credit: 3

A study of basic principles of water purification, including aeration, sedimentation, rapid sand filtration, chlorination, treatment chemicals, taste and odor control, bacteriological control, mineral control, design criteria, maintenance programs, and operational problems. New processes and recent developments are studied. Criteria, rules, regulations, forms and records associated with the field are considered.

EC 243 Water and Waste Water Chemistry

(3-3) Credit: 4

Theory and laboratory techniques for all control tests of water purification and analysis, including color, turbidity, pH, hardness, coagulation, chlorides, fluorides, iron, manganese, bactericides, nitrates, and organic compounds which may be present in water. Qualitative and quantitative analysis are to be stressed in this area.

RELATED COURSES

BIOL 144 Microbiology

(3-3) Credit: 4

Fundamental principles of microbiology; includes study of morphology, physiology, and classification of microbes and their relations to soil, food, water, disease, and immunology. Designed for nursing and pre-med students.

ENGL 137 Business English

(3-0) Credit: 3

Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.

ENGL 239 Technical Writing

(3-0) Credit: 3

The writing of technical reports and business letters.

GOVT 231-232 State and Federal Government

(3-0) Credit: 3

Fulfills the legislative requirements for six hours of American Government. A functional study of the American constitutional and governmental system, federal, state and local. The origins and development of the American governmental system; federal state and interstate relations; lesser units of government; the individual as a citizen, person, and voter; political parties. Legislative, executive, and judicial functions in federal and state governments; financing governmental activities; foreign relations and national defense; governmental services and functions.

MGMT 137A Safety (OSHA)

(3-0) Credit: 3

A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.

PHYS 140 Survey of Physics

(3-3) Credit: 4

A survey of the fundamental principles of physics designed to acquaint students with the basic concepts of physics, contemporary physics, and modern thinking.

PSYC 111 Psychology of Personal and Social Development

(1-0) Credit: 1

Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

SPCH 233 Business Speech

(3-0) Credit: 3

Designed to aid the prospective business or professional person in preparing various types of speaking assignments such as he might encounter in his career. It is planned for agriculture, business, and home economics majors. Emphasis is on structure and techniques of presentation.

TMTH 130 Technical Mathematics

(3-0) Credit: 3

A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.

FIRE PROTECTION TECHNOLOGY

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
FPRT 131	Fundamentals of Fire Protection	3	FPRT 132	Fire Prevention	3
FPRT 133	Fire Protection Systems	3	FPRT 135	Fire Administration II	3
FPRT 134	Fire Administration I	3	CHEM 142	General Chemistry	4
CHEM 141	General Chemistry	4	MATH 137	Business Mathematics	3
ENGL 137	Business English	3	SPCH 131	Fundamentals of Speech	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			
		18			17

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
FPRT 231	Industrial Fire Protection I	3	FPRT 232	Industrial Fire Protection II	3
FPRT 233	Hazardous Material I	3	FPRT 236	Fire and Arson Investigation	3
FPRT 235	Building Codes and Construction	3	FPRT 244	Fire Fighting Tactics and Strategy	4
ENGL 239	Technical Writing	3	ELECTIVE	Technical Elective	3
GOVT 239	Introduction to Political Science	3	ELECTIVE	Approved Elective	3
PE	Physical Education	1	PE	Physical Education	1
		16			17

TECHNICAL ELECTIVES: FPRT 238, FPRT 239.

ELECTIVES must be approved by appropriate college official.

COURSE DESCRIPTIONS FOR FIRE PROTECTION TECHNOLOGY

FPRT 131 Fundamentals of Fire Protection

(3-0) Credit: 3

History and philosophy of fire protection; Review of statistics of loss of life and property by fire; introduction to agencies involved in fire protection; current legislative developments and career orientation; recruitment and training for fire departments; position classification and pay plans; employee organizations; a discussion of current related problems and review of expanding future fire protection problems.

FPRT 132 Fire Prevention

(3-0) Credit: 3

The objectives and views of inspections, fundamental principles, methods, techniques, and procedures of fire prevention administration. Fire prevention organization; public cooperation and image; recognition of fire hazards; insurance problems and legal as-

pects; development and implementation of systematic and deliberate inspection program. Survey of local, state, and national codes pertaining to fire prevention and related technology; relationship between building inspection agencies and fire prevention organizations. Engineering as a solution to fire hazards.

FPRT 133 Fire Protection Systems (3-0) Credit: 3
Study of the required standard for water supply; special hazards protection systems; automatic sprinklers and special extinguishing systems; automatic signaling and detection systems; rating organizations and underwriting agencies.

FPRT 134 Fire Administration I (3-0) Credit: 3
An in-depth study of the organization and management as related to a fire department including budgeting, maintenance of records and reports, and management of fire department offices. Personnel administration and distribution of equipment and personnel and other related topics, including relation of various government agencies to fire protection areas. Fire Service Leadership as viewed from the Company Officer's position.

FPRT 135 Fire Administration II (3-0) Credit: 3
Study to include insurance rates and ratings, preparation of budgets, administration and organization of training in the fire department; city water requirements, fire alarm and communications systems; importance of public relations, report writing and record keeping; measurements of results, use of records to improve procedures, and other related topics; legal aspects relating to fire prevention and fire protection with stress on municipal and state agencies; design and construction of fire department buildings.

FPRT 231 Industrial Fire Protection I (3-0) Credit: 3
Specific concerns and safeguards related to business and industrial organizations. A study of industrial fire brigade organization and development, plant lay-out, fire prevention programs, extinguishing factors and techniques, hazardous situations and prevention methods. Gaining cooperation between the public and private fire department organization. Study of elementary industrial fire hazards in manufacturing plants.

FPRT 232 Industrial Fire Protection II (3-0) Credit: 3
Development of fire and safety organizations in industry; relation between private and public fire protection organizations; current trends, deficiencies and possible solutions for industrial fire problems; role of insurance and other special organizations; an in-depth study of specific industrial processes, equipment, facilities and work practices to understand the potential hazards and techniques to detect and control such hazards. Field trips to selected plants and demonstrations of new techniques, equipment and innovations. Prerequisite: FPRT 231.

FPRT 233 Hazardous Material I (3-0) Credit: 3
Study of chemical characteristics and behavior of various materials that burn or react violently related to storage, transportation, handling hazardous materials, i.e., flammable liquids, combustible solids, and gases. Emphasis on emergency situations and most favorable methods of handling fire fighting and control. Prerequisite: CHEM 141.

FPRT 235 Building Codes and Construction (3-0) Credit: 3
Fundamental consideration and exploration of building construction and design with emphasis on fire resistance of building materials and assemblies, exposures, and related data focused on fire protection concerns; review of related statutory and suggested guidelines, both local and national in scope. Review of Model Building Codes and Life Safety Codes.

FPRT 236 Fire and Arson Investigation**(3-0) Credit: 3**

A study of the detection of arson, investigation techniques, case histories, gathering and preserving of evidence; preparing for a court case; selected discussions of laws, decisions and opinions; kinds of arsonists, interrogation procedures, cooperation and coordination between fire fighters and arson investigators and other related topics.

FPRT 238 Hazardous Material II**(3-0) Credit: 3**

Hazardous materials covering storage, handling, laws, standards, and fire fighting techniques associated with chemicals, gases, flammable liquids, corrosives, poisons, explosives, rocket propellants and exotic fuel, and radio-active materials. The formation of toxic fumes and health hazards is also stressed. Ignition and combustion characteristics of gases, liquids, and solids related to free-burning fire and explosion phenomena. Familiarization with radiological instruments, human exposure to radiation, decontamination procedures, common uses of radioactive materials and operational procedures. Prerequisite: FPRT 233.

FPRT 239 Fire Safety Education**(3-0) Credit: 3**

A survey of physical, chemical, and electrical hazards and their relationship to loss of property and/or life. Study of codes, laws, problems, and cases. Detailed examination and study of the physical and psychological variables related to the occurrence of casualties. Safe storage, transportation and handling techniques are stressed to eliminate or control potential risks.

FPRT 244 Fire Fighting Tactics and Strategy**(4-0) Credit: 4**

Essential elements in analyzing the nature of fire and determining the requirements. Efficient and effective utilization of manpower, equipment and apparatus. Emphasis to be placed on pre-planning, study of conflagration problems, fire ground organization problem solving related to fire ground decision making and attack tactics and strategy. Use of Mutual Aid and large scale command problems. Prerequisite: Completion of, or concurrent registration in all other required FPRT courses.

RELATED COURSES

CHEM 141, 142 General Chemistry**(3-4) Credit: 8**

A thorough study of the modern concepts and fundamental principles of chemistry. Quantitative experiments are stressed during the first semester of laboratory and the qualitative analysis of the common cation and anions and an introduction to quantitative analysis is studied in the second semester laboratory. The course is designed for science majors and minors. The course includes three hours lecture, one hour recitation, and three hours of laboratory per week.

ENGL 137 Business English**(3-0) Credit: 3**

Fundamentals of grammar, punctuation, and sentence structure as employed in written business communications. Word study; sentence analysis; punctuation; paragraphing; planning.

ENGL 239 Technical Writing**(3-0) Credit: 3**

The writing of technical reports and business letters.

GOVT 239 Introduction to Political Science**(3-0) Credit: 3**

Emphasis on political fundamentals, public law, theory and organization of the modern state, political dynamics, public policy, and international relations.

MATH 137 Business Mathematics**(3-0) Credit: 3**

Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
Designed to orient the student to college life, and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

SPCH 131 Fundamentals of Speech (3-0) Credit: 3
Instruction is given in speech preparation and delivery with emphasis on communication through audience analysis, gesturing, and vocal variety. Students will have opportunity for practice in the researching, outlining, and presentation of speeches.

FOOD SERVICE MANAGEMENT

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
HM 130	Food & Beverage Management	3	RMGT 135	Food Purchasing	3
RMGT 133	Sanitation & Safety	3	RMGT 136	Menu Planning	3
RMGT 131	Food Preparation & Serving	3	RMGT 142	Meat Science	4
RMGT 132	Nutrition	3	MATH 137	Business Mathematics	3
ENGL 137	Business English	3	OA 138	Business Correspondence	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			17
		17			

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
RMGT 221	Food Service Terminology	2	RMGT 233	Cafeteria Management	3
RMGT 241	Classical Food Preparation	4	RMGT 236	Layout and Design	3
RMGT 242	Exhibition Work	4	RMGT 234	Marketing & Sales Promotion	3
MGMT 232	Personnel Management	3	MGMT 235	Business Law	3
MGMT 239	Supervision	3	BUS 235	Introduction to Managerial Accounting	3
PE	Physical Education	1	PE	Physical Education	1
		17			16

COURSE DESCRIPTIONS FOR FOOD SERVICE MANAGEMENT

RMGT 131 Food Preparation and Serving (3-3) Credit: 3
An introduction to techniques of food preparation. Includes preparation of vegetables, pastries, oven dishes, soups, salads, meats, fish, and poultry. Techniques include experimental cookery, food marketing and preservation, serving and table service.

RMGT 132 Nutrition (3-1) Credit: 3
A study of dietary needs; the role of proteins, fats, carbohydrates, minerals and vitamins; factors to be considered in proper selection and preparation of foods for maximum nutritional value.

- RMGT 133 Sanitation and Safety** (2-3) Credit: 3
Personal cleanliness; sanitary practices in food preparation; cause, investigation and control of illness caused by food contamination; food storage and refrigeration; sanitation of dishes, equipment, and kitchens; cleansing materials, garbage and refuse disposal; safety precautions, and accident prevention.
- RMGT 135 Food Purchasing** (2-2) Credit: 3
Applied theory of food and beverage purchasing; factors affecting selection, standards, quality, and prices; techniques of receiving, storing and issuing supplies, foods, and materials; applied theory of cost control, pricing, and portions.
- RMGT 136 Menu Planning** (2-2) Credit: 3
Basic factors of planning menus; variety and nutrition in menu planning; technique of preparing attractive menus and maintaining budgetary controls; types of menus for various public and private institutions.
- RMGT 142 Meat Science** (3-3) Credit: 4
An introductory course in raising, slaughtering, and packing meats, fish, and poultry, accompanied by an intensive study of wholesale and retail cuts of beef, veal, pork and lamb. Emphasis is placed on the knowledge of grades, bone structure, muscle configuration and appropriate cooking methods of hotel and restaurant meat cuts.
- RMGT 221 Food Service Terminology** (2-0) Credit: 2
Food service terminology, being a compilation of various languages, will break down and define these terms with an emphasis on the French language.
- RMGT 233 Cafeteria Management** (3-0) Credit: 3
This course points out the specific differences between an industrial cafeteria and a conventional restaurant and explains how to cope with the unusual problems of industrial and institutional feeding.
- RMGT 234 Marketing and Sales Promotion** (3-3) Credit: 3
A course designed to develop an understanding of what must be done in order to bring the wheels of production and consumption in the United States into mesh. The business activities that direct the flow of goods and services from the producer to the ultimate consumer are analyzed. Coordination of personal selling, advertising, produce design, market research, and customer relations/services are the individual ingredients of sales promotion, and each is examined in detail. Advertising is studied as the force that creates prospects of countless products, converts these prospects into customers, and keeps customers returning and buying.
- RMGT 236 Layout and Design** (3-0) Credit: 3
Fundamentals of equipment layout for optimum production and operational efficiency. This course will include procedures to design and decorate remodeling projects.
- RMGT 241 Classical Food Preparation** (3-3) Credit: 4
This course emphasizes the fine points of culinary skills and theory. Concentration on the preparation of menus. Responsibilities of the chef and Sous-chef.
- RMGT 242 Exhibition Work** (3-3) Credit: 4
Taught in conjunction with Classical Food Preparation. This course is designed to assist the student in professional employment. The essence of exhibitions, buffets, and centerpieces — the role of the Executive Chef will be emphasized. This course will include an exhibition planned and prepared by the student.

RELATED COURSES

BUS 235 Introduction to Managerial Accounting (3-2) Credit: 3
Emphasis on managerial uses of accounting data, budgets, controls, analytical techniques, and interpretations; a study of limitations of managerial information systems and reports.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.

HM 130 Food and Beverage Management (3-0) Credit: 3
This is an introductory course in food and beverage operations, with an introduction to purchasing, receiving, storage, preparation and services.

MATH 137 Business Mathematics (3-0) Credit: 3
Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.

MGMT 232 Personnel Management (3-0) Credit: 3
The dynamic role of management as it relates to personnel, with emphasis on the aspects important to the line executive or supervisor. Personnel functions and procedures are viewed in the light of management objectives, while personnel management is treated as an active and dynamic process which is motivated by basic human drives.

MGMT 235 Business Law (3-0) Credit: 3
Nature and scope of law; court system; law of contracts; principal and agent; business organizations, including partnerships and corporation; Texas community property laws.

MGMT 239 Supervision (3-0) Credit: 3
A course designed to provide an understanding of: planning work, leadership, decision making, work problem solving, human behavior and personnel relations.

OA 138 Business Correspondence (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

HOTEL/MOTEL MANAGEMENT

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
HM 130	Food & Beverage Management	3	HM 133	Front Office Procedures	3
HM 132	Hotel/Motel Organization & Administration	3	HM 144	Hotel/Motel Sales Promotion	4
RMGT 131	Food Preparation & Serving	3	RMGT 133	Sanitation & Safety	3
MATH 137	Business Mathematics	3	BUS 237	Principles of Accounting I	3
ENGL 137	Business English	3	OA 138	Business Correspondence	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			—
		—			17
		17			

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
HM 232	Supervisory Housekeeping	3	HM 231	Hotel/Motel Law	3
RMGT 135	Food Purchasing	3	HM 234	Hotel/Motel Financial Management	3
MGMT 136	Human Relations	3	HM 235	Hotel/Motel Maintenance	3
MGMT 232	Personnel Management	3	HM 236	Recreational Services	3
BUS 235	Introduction to Managerial Accounting	3	RMGT 232	Restaurant Merchandising	3
PE	Physical Education	1	PE	Physical Education	1
		—			—
		16			16

COURSE DESCRIPTIONS FOR HOTEL/MOTEL MANAGEMENT

HM 130 Food and Beverage Management (3-0) Credit: 3
This is an introductory course in food and beverage operations, with an introduction to purchasing, receiving, storage, preparation and service.

HM 132 Hotel/Motel Organization and Administration (3-0) Credit: 3
This course includes management and organization of hotel industry, communications, accounting, personnel relations and administration, management of guests. Planning for today and tomorrow.

HM 133 Front Office Procedures (3-0) Credit: 3
This course includes hotel organization and services, front office salesmanship, cash-iering, front office posting, accounting for guest charges, procedures and form for accounting controls.

HM 144 Hotel/Motel Sales Promotion (3-3) Credit: 4
This course includes sales planning, media advertising to include outdoor, radio and TV, mail advertising; personal sales; telephone selling; individual and group room business; food and beverage sales and sales incentive.

HM 231 Hotel/Motel Law (3-0) Credit: 3
This course includes a study of the consequences resulting from a lack of foresight on the part of management, understanding of the attitudes of courts toward innkeepers involved in litigations, and an awareness of the responsibilities law imposes upon the innkeeper.

HM 232 Supervisory Housekeeping (3-0) Credit: 3
This course includes organization of a housekeeping department of a hotel, job schedules, job breakdown, floor care, stain removal, fire inspection, purchasing records, equipment records, linen inventory and care, carpeting and care, and basic interior design.

HM 234 Hotel/Motel Financial Management (3-0) Credit: 3
This course includes accounting of business for creditors, owners and government; control of payroll and other operational expenses; and profit making management.

HM 235 Hotel/Motel Maintenance (3-0) Credit: 3
This course includes a study of the organization, terms and concepts common to building maintenance. Maintenance functions to be studied include heating, plumbing, electrical, refrigeration and air conditioning, communications and signal systems, kitchen equipment, fire prevention and protection, and elevator systems.

RELATED COURSES

BUS 235 Introduction to Managerial Accounting (3-2) Credit: 3
Emphasis on managerial uses of accounting data, budgets, controls, analytical techniques, and interpretations; a study of limitations of managerial information systems and reports.

BUS 237 Principles of Accounting I (3-0) Credit: 3
Analysis and recording of business transactions; use of journal and ledger; accounting statements; payroll records and payroll taxes; introduction to partnership accounting; special journals and ledgers; voucher systems.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.

MATH 137 Business Mathematics (3-0) Credit: 3
Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.

MGMT 136 Human Relations (3-0) Credit: 3
A study of "Human Relations" as an emerging scientific discipline of study in which basic concepts and principles concerning man at work are emphasized. It is structured to explain the "whys" and "wherefores" of the behavior of industrial man.

MGMT 232 Personnel Management (3-0) Credit: 3
The dynamic role of management as it relates to personnel, with emphasis on the aspects important to the line executive or supervisor. Personnel functions and procedures are viewed in the light of management objectives, while personnel management is treated as an active and dynamic process which is motivated by basic human drives.

OA 138 Business Correspondence (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

RMGT 131 Food Preparation and Serving (3-3) Credit: 3
An introduction to techniques of food preparation. Includes preparation of vegetables, pastries, oven dishes, soups, salads, meats, fish, and poultry. Techniques include experimental cookery, food marketing and preservation, serving and table service.

RMGT 133 Sanitation and Safety (2-3) Credit: 3
Personal cleanliness; sanitary practices in food preparation; cause, investigation, and control of illness caused by food contamination; food storage and refrigeration, sanitation of dishes, equipment, and kitchens; cleansing materials, garbage and refuse disposal; safety precautions, and accident prevention.

RMGT 135 Food Purchasing (2-2) Credit: 3
Applied theory of food and beverage purchasing; factors affecting selection, standards, quality, and prices; techniques of receiving, storing and issuing supplies, foods, and materials, applied theory of cost control, pricing, and portions.

RMGT 232 Restaurant Merchandising (2-3) Credit: 3
Sales promotion; interior decor; types and uniformity of service; food and beverage display; menu and room styling.

INFORMATION SYSTEMS SPECIALIST

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
CS 130A	Introduction to Computer Concepts	3	CS 238	Systems Analysis	3
CS 135	Introduction to Systems Analysis	3	MGMT 135	Introduction to Management	3
BUS 131	Introduction to Business	3	MGMT 235	Business Law	3
ENGL 131	Composition and Rhetoric	3	BUS 237	Principles of Accounting	3
MATH	Approved Mathematics	3	MATH	Approved Mathematics	3
		15			15

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
CS 244	MIS and Information Storage and Retrieval	4	CS 245	Data Information Structures	4
MGMT 136	Human Relations	3	MGMT 232	Personnel Management	3
BUS 238	Principles of Accounting	3	BUS 235	Introduction to Managerial Accounting	3
ENGL 239	Technical Writing	3	ELECTIVE	Approved Elective	3
MATH 138	Elementary Statistics	3	ELECTIVE	Approved Elective	3
		16			16

MATH 131, MATH 132 or MATH 135, MATH 136

CS 121, CS 136, CS 138, CS 143, MGMT 234, MGMT 239, PSYC 231, or electives approved by appropriate college official.

COURSE DESCRIPTIONS FOR INFORMATION SYSTEMS SPECIALIST

CS 121 RPG Programming (1-2) Credit: 2
Report Program Generator, a problem oriented language involving fixed program logic, file description, input, calculation, output of practical business oriented problems on card, tape, and disk systems.

CS 130A Introduction to Computer Concepts Credit: 3
An overview of applications of computers. The course describes major computer system components; stresses the process of information system development, strength and limitations of the application of computer technology, and the relationship between the user of computer and information systems with the technical specialist.

CS 135 Introduction to Systems Analysis Credit: 3
Introduction to problems from business and science using logical and mathematical techniques particularly suited to characteristics of the digital computer. Problems involve qualification of descriptive data, manipulation of these data and expression of analysis in descriptive terms. Includes documentation and flowcharting methods.

CS 136 Introduction to Computer Operations (2-3) Credit: 3
Basic card handling procedures and machine applications with job execution at local and remote job entry stations. Includes concepts for operation of unit record and computer card systems.

CS 138 COBOL Programming (3-2) Credit: 3
Theory and operation of digital computers and programming language and techniques particularly suitable for problems and non-numeric in nature.

CS 143 Introduction to Computer Science & Computer Programming (3-3) Credit: 4
This course is intended to be the first course for Computer Science majors and no prior knowledge of computers or programming is assumed. The programming language, FORTRAN, and flowcharting are introduced at the beginning of the course so that the student will have a better idea of what a computer does before investigating how it functions.
Approximately half of the lectures and nearly all of the laboratories are devoted to programming and flowcharting. Programming assignments will run concurrently with other fundamental topics such as historical development of computers, typical present day hardware and software and computer applications.

CS 238 Systems Analysis Credit: 3
The methodology, techniques and tools used in performing in-depth analysis of information systems destined for computer implementation are described in their relationships within the overall study. The use and requirements associated with decision tables, study plans, testing plans and documentation are emphasized. Prerequisite: CS 135.

CS 244 MIS and Information Storage and Retrieval Credit: 4
A study of file organizations and search strategy techniques. It will include the study of design, construction, and use of MIS systems with an in-depth look at the advantages and disadvantages of such systems.

CS 245 Data and Information Structures Credit: 4
Basic concepts of data. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Storage systems and structures, and storage allocation and collection. Multilinked structures. Symbol tables and searching techniques. Sorting (ordering) techniques. Formal specification of data structures, data structures in programming languages, and generalized data management systems.

RELATED COURSES

MGMT 135 Introduction to Management Credit: 3
This course is designed to give the student a knowledge and understanding of management theories and functions which are essential to the person planning a career in business or industry.

MGMT 136 Human Relations (3-0) Credit: 3
A study of "Human Relations" as an emerging scientific discipline of study in which basic concepts and principles concerning man at work are emphasized. It is structured to explain the "whys" and "wherefores" of the behavior of industrial man.

MGMT 232 Personnel Management (3-0) Credit: 3
The dynamic role of management as it relates to personnel, with emphasis on the management aspects important to the line executive or supervisor. Personnel functions and procedures are viewed in the light of management objectives, while personnel management is treated as an active and dynamic process which is motivated by basic human drives.

MGMT 234 Labor-Management Relations (3-0) Credit: 3
Labor relations aspects of personnel management are emphasized; selection and placement, discipline and morale, promotions, lay-offs, job evaluation, incentive systems, profit sharing and the influence of collective bargaining and legislation on personnel policies. Methods used by organized labor and employers in industrial conflicts.

MGMT 235 Business Law Credit: 3
Nature and scope of law; court system; law of contracts; principal and agent, business organizations, including partnerships and corporations; community property laws.

MGMT 239 Supervision (3-0) Credit: 3
A course designed to provide an understanding of: planning work, leadership, decision making, work problem solving, human behavior and personnel relations.

BUS 131 Introduction to Business Credit: 3
Provides overall picture of business operations; includes analysis of specialized fields within business organizations; identifies role of business in modern society.

BUS 235 Introduction to Managerial Accounting (3-2) Credit: 3
Emphasis on managerial uses of accounting data, budgets, controls, analytical technique and interpretation. A study of limitations of managerial information systems and reports. Prerequisite: BUS 238.

BUS 237 Principles of Accounting Credit: 3
Analysis and recording of business transactions; use of journal and ledgers; accounting statements; payroll records and payroll taxes, introduction to partnership accounting, special journals and ledgers; voucher system.

BUS 238 Principles of Accounting (3-0) Credit: 3
Continuation of Principles of Accounting I. Internal control; partnership and corporation accounting; accounting for manufacturing concerns; analysis and interpretation of statements. Prerequisite: BUS 237.

- ENGL 131 Composition and Rhetoric** (3-0) Credit: 3
Composition of short papers, with emphasis on sentence structure, paragraph development, and paper organization. Analysis of expository prose.
- ENGL 239 Technical Writing** (3-0) Credit: 3
The writing of technical reports and business letters.
- MATH 131 Intermediate Algebra** Credit: 3
Includes a brief review of fundamental algebraic operations, linear equations, systems of linear equations, determinants, quadratic functions, inequalities, exponential functions, logarithmic functions. Prerequisite: MATH 130 or equivalent.
- MATH 132 College Algebra** Credit: 3
Includes consideration of quadratic functions, systems of quadratic equations, quadratic inequalities, matrices, binomial theorem, exponential functions, sequences, progressions, series, and applications. Prerequisite: MATH 131 or equivalent.
- MATH 135 Finite Mathematics** Credit: 3
Symbolic logic, set theory, induction, permutations, combinations, counting methods, probability. Prerequisite: MATH 131 or equivalent.
- MATH 136 Finite Mathematics** Credit: 3
A continuation of MATH 135. Introduction to statistics, graphing, vectors, matrices, linear programming, and theory of games. Prerequisite: MATH 135.
- MATH 138 Elementary Statistics** (3-0) Credit: 3
Collection and tabulation of data, bar charts, graphs, sampling, averages, dispersion, correlation, index number, normal curve, probability, inferential statistics, applications.
- PSYC 231 Introduction to Psychology** Credit: 3
Basic principles of human experience and behavior involving biological, environmental, and sociological studies. An overview course including an introduction to the major studies of psychology.

LAW ENFORCEMENT TECHNOLOGY

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
✓LE 131	Introduction to Law Enforcement	3	LE 137	Police-Community Relations	3
✓LE 132	Criminal Investigation	3	LE 138	Police Role in Crime and Delinquency	3
✓LE 133	Legal Aspects of Law Enforcement	3	LE 139	Police Organization and Administration	3
✓LE 134	Criminal Procedures and Evidence	3	SOC 231	Introduction to Sociology	3
ENGL 131	Composition & Rhetoric	3	ENGL 132	Composition & Rhetoric	3
PSYC 111	Psychology of Personal & Social Development	1	PE 218A	Health and First Aid	1
PE 218	Physical Conditioning	1			
		17			16

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
LE	Law Enforcement Elective	3	LE	Law Enforcement Elective	3
LE 234	Juvenile Procedures	3	LE 238	Patrol Administration	3
PSYC 231	Introduction to Psychology	3	SPCH 233	Business Speech	3
GOVT 231	State & Federal Government	3	ELECTIVE	Approved Elective	3
or 232			ELECTIVE	Approved Elective	3
ELECTIVE	Approved Elective	3	PE 218C	Firearms	1
PE 218B	Defensive Tactics	1			—
		16			16

Students desiring to major in a specific option should take the following recommended courses:

PATROL/TRAFFIC MAJOR: LE 135, LE 233, LE 236, LE 239

CORRECTIONAL/COURTS MAJOR: LE 136, LE 231, LE 237, LE 239A

APPROVED ELECTIVES: Choice of course in Humanities or Social Science or in Law Enforcement Administration program, with approval of appropriate college official.

COURSE DESCRIPTIONS FOR LAW ENFORCEMENT TECHNOLOGY

LE 131 Introduction to Law Enforcement (3-0) Credit: 3
History, development, and philosophy of law enforcement in a democratic society; introduction to agencies involved in the administration of criminal justice; career orientation.

LE 132 Criminal Investigation (3-0) Credit: 3
Introduction to the fundamentals of criminal investigation, including theory and history, conduct at crime scenes, collection and preservation of evidence.

LE 133 Legal Aspects of Law Enforcement (3-0) Credit: 3
History and philosophy of modern criminal law, including the structure, definition and application of statutes and leading case law; the elements of crimes and penalties; general provisions of the Penal Code.

LE 134 Criminal Procedures and Evidence (3-0) Credit: 3
Introduction to the rules governing the admissibility of evidence and types of evidence; criminal procedure in various courts, review of a model Code of Criminal Procedure, including laws of arrest, search and seizure, and leading case law on each topic.

LE 135 Traffic Law (3-0) Credit: 3
This course is designed to cover all laws pertaining to the control and enforcement of traffic. The officer is taught the use of spot maps and charts, the techniques of enforcement, and the maintenance of good public relations. An analysis of a model Motor Vehicle Code is given.

LE 136 Survey of Corrections (3-0) Credit: 3
A general course describing the history and evolution of the corrections process. Covers all aspects of institutional and community based corrections.

LE 137 Police-Community Relations (3-0) Credit: 3
The role of the individual officer in achieving and maintaining positive public response; inter-group relations and public information.

- LE 138 Police Role in Crime and Delinquency** (3-0) Credit: 3
Study of deviate behavior and current criminological theories, with emphasis on police applications; crime prevention and the phenomena of crime as it relates to juveniles.
- ✓ **LE 139 Police Organization and Administration** (3-0) Credit: 3
Principles of organization and management as applied to law enforcement agencies; introduction to concepts of organizational behavior.
- LE 231 Probation and Parole** (3-0) Credit: 3
Course will provide the student with some understanding of the evolution of criminal corrections and explore with the student the many avenues which the corrections field branches into, to develop in each student a basic understanding of the various types and methods of correction so that they can function efficiently in the field.
- LE 233 Law Enforcement Seminar** (2-2) Credit: 3
A problems course. (Approval of the appropriate college official required.)
- LE 234 Juvenile Procedures** (3-0) Credit: 3
The organization, functions and jurisdiction of juvenile agencies; the processing and detention of juveniles, case disposition; juvenile statutes and court procedures.
- LE 236 Traffic Planning and Administration** (3-0) Credit: 3
This course consists of the application of traffic problems from the administrative point of view, including engineering, education, enforcement at the supervisory level.
- LE 237 Penology (Jail Operation and Management)** (3-0) Credit: 3
A survey of the basic concepts of penal and correctional rationale as employed by criminal justice administrators. An overview of the operation and management principles of the institutional setting to be examined in depth.
- LE 238 Patrol Administration** (3-0) Credit: 3
Discussion of the administration of beat surveys, special problems arising while the officer is on patrol, improvement in patrol methods, observation of persons and things, preventive techniques, methods of handling complaints, and the development of contracts.
- LE 239 Provost Marshal Operations** (3-0) Credit: 3
The principles of organization and administration as applied to the operational system of a military Provost Marshal's office as well as that of the Inspector General's. Practical training in conduct of briefings, management and attendant qualities of leadership, and some phases of dissent conditions which might impair role and mission of the post command.
- LE 239A Correctional Control and Administration** (3-0) Credit: 3
The course prepares the student to perform supervisory functions related to control of prisoners and contraband; segregation and accountability of prisoners; procedures required at a correctional facility; emergency measures; prisoner privileges; and the records and reports of the detention center.

RELATED COURSES

- ENGL 131 Composition and Rhetoric** (3-0) Credit: 3
Composition of short papers, with emphasis on sentence structure, paragraph development, and paper organization. Analysis of expository prose.
- ENGL 132 Composition and Rhetoric** (3-0) Credit: 3
An introduction to literature: The short story, poetry, drama, and the novel. Composition of short papers with emphasis on interpretation and analysis of literary selections, optional research paper. Prerequisite: ENGL 131, or advanced standing.

GOVT 231-232 State and Federal Government (3-0) Credit: 3
 Fulfills the legislative requirements for six hours of American Government. A functional study of the American constitutional and governmental system, federal, state and local. The origins and development of the American governmental system; federal state and interstate relations; lesser units of government; the individual as a citizen, person, and voter; political parties. Legislative, executive, and judicial functions in federal and state governments; financing governmental activities; foreign relations and national defense; governmental services and functions.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
 Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

PSYC 231 Introduction to Psychology (3-0) Credit: 3
 Basic principles of human experience and behavior involving biological, environmental and sociological studies. An overview course including an introduction to the major studies of psychology. Recommended for students of sophomore standing.

SOC 231 Introduction to Sociology (3-0) Credit: 3
 The study of human society; human behavior and personality as a product of group life; community organizations; social change and current social problems.

SPCH 233 Business Speech (3-0) Credit: 3
 Designed to aid the prospective business or professional person in preparing various types of speaking assignments such as he might encounter in his career. It is planned for agriculture, business, and home economics majors. Emphasis is on structure and techniques of presentation.

MAINTENANCE TECHNOLOGY

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MTNT 141	Carpentry I	4	MTNT 142	Carpentry II	4
MTNT 143	Electricity I	4	MTNT 144	Electricity II	4
AC 140	Air Conditioning & Refrigeration Theory and Application	4	AC 141	Basic Electrical Circuits	4
APPR 141	Introduction to Major Appliances	4	DD 130	Blueprint Reading	3
MATH 137	Business Mathematics	3	SGER 141	Gas Engine Fundamentals	4
PSYC 111	Psychology of Personal & Social Development	1			19
		<hr/> 20			

SECOND YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
MTNT	241	Masonry I	4	MTNT	242	Masonry II	4
MTNT	243	Plumbing I	4	MTNT	244	Plumbing II	4
AC	142	Household Refrigeration Systems	4	MTNT	245	Painting and Refinishing	4
WELD	146	Welding Fundamentals	4	AC	143	Heating Systems	4
ENGL	137	Business English	3	MGMT	137A	Safety (OSHA)	3
			19				19

COURSE DESCRIPTIONS FOR MAINTENANCE TECHNOLOGY

MTNT 141 Carpentry I (2-4) Credit: 4
This course covers the theory and practical application of the use of basic hand and power tools, safety; an overview of residential and light commercial building construction, including foundations, exterior and interior walls and roof framing.

MTNT 142 Carpentry II (2-4) Credit: 4
This course is a continuation of MTNT 141, with additional emphasis placed on cabinetry, exterior and interior trim and finish work, including door and hardware installation. Prerequisite: MTNT 141 or consent of appropriate college official.

MTNT 143 Electricity I (2-4) Credit: 4
This course covers the theory and practical application of basic electricity, including Ohm's Law, AC/DC Circuits, control devices, motor starters, transformers and rectifiers.

MTNT 144 Electricity II (2-4) Credit: 4
This course is a continuation of MTNT 143, with special emphasis on electrical maintenance, service and repair procedures for residential and light commercial buildings. Topics of study include wiring with romex cable, exterior and interior lighting systems and motor installation. Prerequisite: MTNT 143 or consent of appropriate college official.

MTNT 241 Masonry I (2-4) Credit: 4
This course covers the theory and practical applications of laying common brick, concrete tile, and instruction in applying ceramic tile.

MTNT 242 Masonry II (2-4) Credit: 4
This course is a continuation of MTNT 241, with additional emphasis placed on setting forms and the pouring and finishing of concrete slabs. Prerequisite: MTNT 241 or consent of appropriate college official.

MTNT 243 Plumbing I (2-4) Credit: 4
This course covers the theory and practical application of the use of basic hand and power tools used in plumbing; safety; the cutting, threading and joining of different types of pipe.

MTNT 244 Plumbing II (2-4) Credit: 4
This course is a continuation of MTNT 243, with special emphasis on plumbing maintenance, service and repair procedures for residential and light commercial buildings.

MTNT 245 Painting and Refinishing**(2-4) Credit: 4**

This course covers the theory and practical application of painting and refinishing residential and light commercial buildings. Topics of study include various types of paint, the preparation of surfaces to be painted, use of hand and power tools, refinishing damaged furniture surfaces and the proper maintenance of finished surfaces.

RELATED COURSES**AC 140 Air Conditioning and Refrigeration Theory and Application****(2-4) Credit: 4**

This course deals with the basic physical principles of an air conditioning system. Introduction to heat, heat movement, temperature, pressure, refrigerants, temperature pressure relationship to refrigerants, the refrigeration cycle, the major components of refrigeration systems and their relationship to each other. Introduction to the basic electrical devices found in air conditioning systems, i. e., motors, controls, etc. Use of special air conditioning tools and equipment, soldering and welding equipment. The use and care of specialized electrical testing and recording instruments is stressed.

AC 141 Basic Electrical Circuits**(2-4) Credit: 4**

Instruction in basic electricity and its application. Introduces the student to the various electrical devices, their importance in electrical circuits, including those used in residential wiring. Methods of wire connections for new and repair service, making and testing electrical circuits, and the use of electrical measuring and testing equipment.

AC 142 Household Refrigeration Systems**(2-4) Credit: 4**

Application of the refrigeration cycle to household refrigeration, including refrigerators, home freezers, and window air conditioning units. Instruction in service procedures for locating and correcting problems in the mechanical and electrical systems of units; Trouble shooting, repairing and charging refrigeration equipment. Development of shop skills in the use of special refrigeration tools and equipment.

AC 143 Heating Systems**(2-4) Credit: 4**

The study of types of heating equipment and their application. Service procedures for locating and correcting problems in heating systems. Study of manufacturers information on various heating units and equipment, to enable the student to determine proper installation.

APPR 141 Introduction to Major Appliances**(2-4) Credit: 4**

This course covers an introduction to the theory and application of the different types of major appliances. Practical shop applications, safety procedures, use of power and hand tools, test instruments, and use of repair manuals are also included.

DD Blueprint Reading**(2-2) Credit: 3**

The fundamentals of blueprint reading and sketching as they apply to machine drawing.

ENGL 137 Business English**(3-0) Credit: 3**

Fundamentals of grammar, punctuation, and sentence structure as employed in written business communications. Word study; sentence analysis; punctuation; paragraphing; planning.

MATH 137 Business Mathematics**(3-0) Credit: 3**

Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.

MGMT 137A Safety (OSHA)

(3-0) Credit: 3

A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.

PSYC 111 Psychology of Personal and Social Development

(1-0) Credit: 1

Designed to orient the student to college life, and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

SGER 141 Gas Engine Fundamentals

(2-4) Credit: 4

This course covers the theory and repair practices on two cycle, four cycle and wankel engines, both air cooled and water cooled.

WELD 146 Welding Fundamentals

(2-4) Credit: 4

Electric oxy-acetylene welding and torch cutting. Making fusion welds in all positions with both the electric and oxy-acetylene welding. Using the hand cutting torch and cut-a-line cutting machine. (Special industrial application.)

MANAGEMENT

FIRST YEAR

MANAGERIAL ASSISTANT

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 135	Introduction to Management	3	MGMT 136	Human Relations	3
MGMT 134	Work Organization	3	MGMT 232	Personnel Management	3
OA 135	Clerical Practice	3	OA 133	Beginning Typewriting	3
OA 139	Business Machines & Calculations	3	OA 138	Business Correspondence	3
ENGL 137	Business English	3	MATH 137	Business Mathematics	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			—
		—			16
		17			

SECOND YEAR

BUSINESS MANAGEMENT

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 239	Supervision	3	MGMT 236	Business Law	3
MGMT 235	Business Law	3	MGMT 234	Labor-Management Relations	3
OA 234	Bookkeeping	3	ELECTIVE	Approved Elective	3
CS 130	Computers and Society	3	OA 235	Bookkeeping	3
SPCH 233	Business Speech	3	OA 237	Office Administration and Procedures	3
		<u>15</u>			<u>15</u>

Level of typewriting will be determined by student's previous training in these skills, and/or by placement tests. Students who receive advanced standing in typewriting may choose an approved Management elective to fulfill hour requirements.

APPROVED ELECTIVES may be chosen from: MGMT 137, MGMT 139, MGMT 231, and MGMT 137A. Electives appropriate to the student's major will be determined by the appropriate college official.

MANAGEMENT

FIRST YEAR

MANAGERIAL ASSISTANT

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 135	Introduction to Management	3	MGMT 136	Human Relations	3
MGMT 134	Work Organization	3	MGMT 232	Personnel Management	3
OA 135	Clerical Practice	3	OA 133	Beginning Typewriting	3
OA 139	Business Machines & Calculations	3	OA 138	Business Correspondence	3
ENGL 137	Business English	3	MATH 137	Business Mathematics	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			<u>16</u>
		<u>17</u>			

SECOND YEAR

REAL ESTATE AND INSURANCE MANAGEMENT OPTION

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 138R	Real Estate Fundamentals	3	MGMT 233R	Real Estate Finance	3
MGMT 137	Insurance	3	MGMT 238R	Real Estate Law	3
MGMT 230	Credit & Collections	3	MGMT 237	Life Insurance	3
MGMT 231	Marketing and Sales	3	OA 235	Bookkeeping	3
OA 234	Bookkeeping	3	OA 237	Office Administration and Procedures	3
		15			15

Level of typewriting will be determined by the student's previous training in these skills, and/or by placement tests. Students who receive advanced standing in typewriting may choose an approved Management elective to fulfill hour requirements.

APPROVED ELECTIVES may be chosen from: MGMT 234 or MGMT 139 with approval of the appropriate college official.

COURSE DESCRIPTIONS FOR MANAGEMENT

MGMT 134 Work Organization (1-3) Credit: 3
Methods and techniques of planning and organizing work. Principles of time and motion as related to efficient use of worker and work place. Application of work simplification procedures for maximum efficiency of operation. Application of specific programs to current organizational principles.

MGMT 135 Introduction to Management (3-0) Credit: 3
This course is designed to give the student a knowledge and understanding of management theories and functions which are essential to the person planning a career in business or industry.

MGMT 136 Human Relations (3-0) Credit: 3
A study of "Human Relations" as an emerging scientific discipline of study in which basic concepts and principles concerning man at work are emphasized. It is structured to explain the "whys" and "wherefores" of the behavior of industrial man.

MGMT 137 Insurance (3-0) Credit: 3
Introduction to theory and practice of insurance, including life, fire, automobile, and personal and business risk.

MGMT 137A Safety (OSHA) (3-0) Credit: 3
A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.

MGMT 138R Real Estate Fundamentals (3-0) Credit: 3
Basic factors and agencies in modern real estate development; historic, economic, legal and social aspects of real estate; appraisal, financing and agency management.

MGMT 139 Income Tax (3-0) Credit: 3
Income tax legislation; present income tax law and regulations; treasury decisions, court decisions, and departmental ruling; income tax problems and returns.

MGMT 230 Credit and Collections (3-0) Credit: 3
The elements of mercantile and consumer credit; organization of a credit department; sources of credit information; collection tolls and procedures.

- MGMT 231 Marketing and Sales** (3-0) Credit: 3
A study of those aspects of marketing which will achieve a conceptual understanding and serve the needs of business competence. Emphasis is placed on the economic aspect of marketing and its relationship to freedom and democracy.
- MGMT 232 Personnel Management** (3-0) Credit: 3
The dynamic role of management as it relates to personnel, with emphasis on the management aspects important to the line executive or supervisor. Personnel functions and procedures are viewed in the light of management objectives, while personnel management is treated as an active and dynamic process which is motivated by basic human drives.
- MGMT 232A Law and Legal Assistance** (3-0) Credit: 3
Nature and scope of the law, court systems, law of contracts, principle and agent as relates to the military. Explanation of bailments, carriers, mortgages, securities, negotiable instruments, banks and banking, wills and estates. The procedures of obtaining and acquiring legal assistance for both military and civilian cases in or out of the continental limits of the United States of America are addressed. Emphasis is given to the knowledge required by the supervisor to counsel his subordinates in the areas of law and legal assistance.
- MGMT 233R Real Estate Finance** (3-0) Credit: 3
This course includes the study of federal and state practices in mortgages and real estate finance; also includes a survey of savings and loan associations, commercial banks, life insurance companies and mortgage bankers.
- MGMT 234 Labor-Management Relations** (3-0) Credit: 3
Labor relations aspects of personnel management are emphasized; selection and placement, discipline and morale, promotions, lay-offs, job evaluation, incentive systems, profit sharing and the influence of collective bargaining and legislation on personnel policies. Methods used by organized labor and employers in industrial conflicts.
- MGMT 235 Business Law** (3-0) Credit: 3
Nature and scope of law; court system; law of contracts; principal and agent; business organizations, including partnerships and corporation; Texas community property laws.
- MGMT 236 Business Law** (3-0) Credit: 3
Additional studies in law of business, dealing with bailments, carriers, mortgages, suretyships, negotiable instruments, banks and banking, wills and estates, sales, bankruptcy.
- MGMT 237 Life Insurance** (3-0) Credit: 3
Principles of life insurance; business and personal use in insurance; classification and analysis of policies; reserves and policy values; organization and administration of life insurance companies.
- MGMT 238R Real Estate Law** (3-0) Credit: 3
Contains a study of sources of real estate law, legal estates and ownership, deeds, contracts, law of agency and brokerage, escrow agreements, closing of sales, title assurance methods, mortgages, liens, leases, homesteads, wills, administration of estates, zoning and building ordinances, property taxation and other matters of law which pertain to real estate transactions.
- MGMT 239 Supervision** (3-0) Credit: 3
A course designed to provide an understanding of planning work leadership, decision making, work problem solving, human behavior and personnel relations.

MGMT 239A Personnel Counseling (3-0) Credit: 3
Systematic study of major theories of personnel counseling with supervised experience in role-playing utilizing these approaches.

MGMT 239B Military and Statistical Accounting (3-0) Credit: 3
To train the student to complete statistical surveys of the military community at the company and battalion level, and to compute these studies in proper report format. The student will also learn the fundamental principles of military report systems to include morning reports.

RELATED COURSES

CS 130 Computers and Society (3-0) Credit: 3
A non-technical survey course intended for non-Computer Science majors, which studies the role that computers play in our society. The purpose is to give a basic general and accurate picture of what computers are, do and can do and to lay to rest myths and mystiques concerning computers. The effects the computers have had and are having on society are studied and used to project what effects they may have in the future. An introduction to data representation flow-charting and computer program logic is presented to the non-Computer Science major to write a simple computer program.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis, punctuation; paragraphing, planning.

MATH 137 Business Mathematics (3-0) Credit: 3
Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.

OA 133 Beginning Typewriting (3-3) Credit: 3
A beginning course in touch typewriting for the mastery of machine parts and the keyboard. Special emphasis on speed development, including an introduction of letter writing, tabulating, and preparing manuscripts.

OA 135 Clerical Practice (2-1) Credit: 3
Procedures of filing and finding operations employed in business offices, standard filing systems. Training in the operation of spirit duplicators, mimeograph, and dry copy machines. Training in proficiency in handling of the mail, telephone techniques, and handling receptionist duties. Considerable emphasis and training in integrating these activities into an office environment will be instructed.

OA 138 Business Correspondence (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.

OA 139 Business Machines and Calculations (3-3) Credit: 3
Technique familiarization in the operation of the most commonly used office machines. Computation; calculations; speed drills; percentages, discount and net values, chain discounts; business forms.

OA 234 Bookkeeping (3-3) Credit: 3
Elementary principles of bookkeeping, journalization; posting, statements, special journals; subsidiary ledgers.

OA 235 Bookkeeping

(3-3) Credit: 3

Analysis and recording of business transactions; use of journal and ledger; trial balance and work sheets; adjusting and closing entries; accounting statements; payroll records and payroll taxes; introduction to partnership accounting; special journals and ledgers; business papers and business procedures relating to accounting; voucher system.

OA 237 Office Administration and Procedures

(3-0) Credit: 3

This course is a finishing course through which secretarial and/or clerical students may have an opportunity to relate all information, knowledge, and skills acquired in their academic preparation. Special emphasis will be given to the inter-relatedness of the office in various systems that affect office work.

PSYC 111 Psychology of Personal and Social Development

(1-0) Credit: 1

Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

SPCH 233 Business Speech

(3-0) Credit: 3

Designed to aid the prospective business or professional person in preparing various types of speaking assignments such as he might encounter in his career. It is planned for agriculture, business, and home economics majors. Emphasis is on structure and techniques of presentation.

APPLIED MANAGEMENT

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 135	Introduction to Management	3	BUS 236	Personal Finance	3
MGMT 136	Human Relations	3	MATH 137	Business Mathematics	3
BUS 132	Consumer Economics	3	OA 138	Business Correspondence	3
CS 130A	Introduction to Computer Concepts	3	SPCH 131	Fundamentals of Speech	3
ENGL 137	Business English	3	ELECTIVE	Approved Elective	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			
		17			16

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 232	Personnel Management	3	MGMT 232A	Law and Legal Assistance	3
MGMT 239	Supervision	3	MGMT 239A	Personnel Counseling	3
BUS 237	Principles of Accounting	3	HIST 231	International Relations & U. S. Foreign Policy	3
SPCH 233	Business Speech	3	ELECTIVE	Approved Elective	3
ELECTIVE	Approved Elective	3	ELECTIVE	Approved Elective	3
PE	Physical Education	1	PE	Physical Education	1
		16			16

APPROVED ELECTIVES: Bus 131, Bus 238, MGMT 130A, MGMT 134, MGMT 134A, MGMT 137, MGMT 137A, MGMT 138R, MGMT 139, MGMT 231, MGMT 232B, MGMT 233R, MGMT 234, MGMT 235, MGMT 236, MGMT 238R, MGMT 239B, OA 237, SOC 239.

COURSE DESCRIPTIONS FOR APPLIED MANAGEMENT

MGMT 130A Organization and Management (3-0) Credit: 3
Organizational structure can have considerable impact on the manner in which an organization functions. The student studies the complex variables over which managers can exercise control to determine proper structure. While surveying management topics such as planning, decision making, organizing, staffing and controlling, this course deals, in specific terms, with how the organization must be structured to fit its environment, and operation.

MGMT 134 Work Organization (1-3) Credit: 3
Methods and techniques of planning and organizing work. Principles of time and motion as related to efficient use of worker and work place. Application of work simplification procedures for maximum efficiency of operation. Application of specific programs to current organizational principles.

MGMT 134A Fundamentals of Industrial Management (3-0) Credit: 3
Application of the systems approach to the unification of all areas covered by the term industrial management. All phases of industrial management from human factors to environmental factors are covered along with the manner and methods through which work can be simplified yet made more meaningful and satisfying.

MGMT 135 Introduction to Management (3-0) Credit: 3
This course is designed to give the student a knowledge and understanding of management theories and functions which are essential to the person planning a career in business or industry.

MGMT 136 Human Relations (3-0) Credit: 3
A practical application of the principles, methods and concepts of the behavioral sciences to interpersonal relationships in the business and industrial environment.

MGMT 137 Insurance (3-0) Credit: 3
Introduction to theory and practice of insurance, including life, fire, automobile, and personal and business risk.

MGMT 137A Safety (OSHA) (3-0) Credit: 3
A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.

- MGMT 138R Real Estate Fundamentals** (3-0) Credit: 3
Basic factors and agencies in modern real-estate development; historic, economic, legal and social aspects of real estate; appraisal, financing and agency management.
- MGMT 139 Income Tax** (3-0) Credit: 3
Income tax legislation; present income tax law and regulations; treasury decisions, court decisions, and departmental rulings; income tax problems and returns.
- MGMT 231 Marketing and Sales** (3-0) Credit: 3
A study of those aspects of marketing which will achieve a conceptual understanding and serve the needs of business competence. Emphasis is placed on the economic aspect of marketing and the relationship to freedom and democracy.
- MGMT 232 Personnel Management** (3-0) Credit: 3
The dynamic role of management as it relates to personnel, with emphasis on the management aspects important to the line executive or supervisor. Personnel functions and procedures are viewed in the light of management objectives, while personnel management is treated as an active and dynamic process which is motivated by basic human drives.
- MGMT 232A Law and Legal Assistance** (3-0) Credit: 3
Nature and scope of the law, court systems, law of contracts, principal and agent as relates to the military. Explanation of bailments, carriers, mortgages, securities, negotiable instruments, banks and banking, wills and estates. The procedures of obtaining and acquiring legal assistance for both military and civilian cases in or out of the continental limits of the United States of America are addressed. Emphasis is given on the knowledge required by the supervisor to counsel his subordinates in the areas of law and legal assistance.
- MGMT 232B Fundamentals of Systems Management** (3-0) Credit: 3
Introduction to the "systems" concept of management and integration of this concept with the more traditional "principles" approach. This course combines theory and application of systems management and focuses on systems as they exist in many fields such as education, law enforcement, military, industry, and a variety of non-profit organizations.
- MGMT 233R Real Estate Finance** (3-0) Credit: 3
This course includes the study of federal and state practices in mortgages and real estate finance; also includes a survey of savings and loan associations, commercial banks, life insurance companies and mortgage bankers. Prerequisite: MGMT 138R or consent of the appropriate College official.
- MGMT 234 Labor-Management Relations** (3-0) Credit: 3
Labor relations aspects of personnel management are emphasized; selection and placement, discipline and morale, promotions, lay-offs, job evaluation, incentive systems, profit sharing and the influence of collective bargaining and legislation on personnel policies. Methods used by organized labor and employers in industrial conflicts.
- MGMT 235 Business Law** (3-0) Credit: 3
Nature and scope of law; court system; law of contracts; principal and agent, business organizations, including partnerships and corporation; Texas community property laws.
- MGMT 236 Business Law** (3-0) Credit: 3
Additional studies in law of business, dealing with bailments, carriers, mortgages, suretyships, negotiable instruments, banks and banking, wills and estate, sales, bankruptcy.

MGMT 238R Real Estate Law

(3-0) Credit: 3

Contains a study of sources of real estate law, legal estates and ownership, deeds, contracts, law of agency and brokerage, escrow agreements, closing of sales, title assurance methods, mortgages, liens, leases, homesteads, wills, administration of estates, zoning and building ordinances, property taxation and other matters of law which pertain to real estate transactions. Prerequisite: MGMT 138R or consent of the appropriate College official.

MGMT 239 Supervision

(3-0) Credit: 3

A course designed to provide an understanding of: Planning work, leadership, decision making, work problem solving, human behavior and personnel relations.

MGMT 239A Personnel Counseling

(3-0) Credit: 3

Systematic study of major theories of personnel counseling with supervised experience in role-playing utilizing these approaches.

MGMT 239B Military and Statistical Accounting

(3-0) Credit: 3

To train the student to complete statistical surveys of the military community at the company and battalion level and to place these studies in proper report format. The student will also learn the fundamental principles of military report systems to include morning reports.

RELATED COURSES

BUS 131 Introduction to Business

(3-0) Credit: 3

Provides overall picture of business operations; includes analysis of specialized fields within business organizations; identifies role of business in modern society.

BUS 132 Consumer Economics I

(3-0) Credit: 3

A study of consumer goods and services as related to the home and family problems and pitfalls associated therewith. This includes a study of family purchasing, advertising, commodity information, sales approaches from a consumer viewpoint and includes sources of advice and counseling. A course to permit the supervisor to better advise his subordinates on economic problems.

BUS 236 Personal Finance

(3-0) Credit: 3

Personal and family accounts, budgets, budgetary control, bank accounts, charge accounts, borrowing, investing, insurance, standards of living, renting, home ownership, wills, trust plans.

BUS 237 Principles of Accounting I

(3-0) Credit: 3

Analysis and recording of business transactions; use of journal and ledgers; accounting statements; payroll records and payroll taxes, introduction to partnership accounting, special journals and ledgers, voucher systems.

BUS 238 Principles of Accounting II

(3-0) Credit: 3

Continuation of Principles of Accounting I. Internal control; partnership and corporation accounting; accounting for manufacturing concerns; analysis and interpretation of statements. Prerequisite: BUS 237.

CS 130A Introduction to Computer Concepts

Credit: 3

An overview of applications of computers. The course describes major computer system components; stresses the process of information system development, strength and limitations of the application of computer technology, and the relationship between the user of computer and information systems with the technical specialist.

- ENGL 137 Business English** (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study; sentence analysis; punctuation; paragraphing; planning.
- HIST 231 International Relations and U.S. Foreign Policy** (3-0) Credit: 3
A study of international relationships and problems in world affairs; organization and processes used to arrive at foreign policy decisions of the United States; the elements of international communist ideologies; and the evolution of American Foreign Policy since 1945.
- MATH 137 Business Mathematics** (3-0) Credit: 3
Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.
- OA 138 Business Correspondence** (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.
- OA 237 Office Administration and Procedures** (3-0) Credit: 3
This course is a finishing course through which secretarial and/or clerical students may have an opportunity to relate all information, knowledge, and skills acquired in their academic preparation. Special emphasis will be given to the interrelatedness of the office in various systems that affect office work.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 3
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.
- SOC 239 Race or Minority Relations** (3-0) Credit: 3
An in-depth multicultural approach to the study of racial and minority groups with group discussion on how to improve communication and understanding. The patterns of adjustment and interactions of ethnic and racial groups as revealed by sociological analysis.
- SPCH 131 Fundamentals of Speech** (3-0) Credit: 3
Instruction is given in speech preparation and delivery with emphasis on communication through audience analysis, gesturing, and vocal variety. Students will have opportunity for practice in the researching, outlining and presentation of speeches.
- SPCH 233 Business Speech** (3-0) Credit: 3
Designed to aid the prospective business or professional person in preparing various types of speaking assignments such as he might encounter in his career. It is planned for agriculture, business, and home economics majors. Emphasis is on structure and techniques of presentation.

SECOND YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
MGMT	137	Insurance	3	MGMT	139	Income Tax	3
ET	143	Introduction to Electron Devices	4	MGMT	235	Business Law	3
ET	153	Advanced Electricity for Electronics	5	ET	144	Basic Test Equipment	4
OA	234	Bookkeeping	3	OA	235	Bookkeeping	3
SPCH	233	Business Speech	3	ELECTIVE		Approved Elective	3
PE		Physical Education	1	PE		Physical Education	1
			<hr/>				<hr/>
			19				17

APPROVED ELECTIVES: BUS 231, BUS 232, BUS 236, ET 131, MATH 130, MGMT 230, MGMT 231, MGMT 236, MTNT 141, MTNT 142, MTNT 143, MTNT 144, MTNT 243, MTNT 244, OA 133, OA 134, OA 138, OA 139, TMTH 130

APPLIED MANAGEMENT FOOD SERVICE OPERATIONS OPTION

FIRST YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
MGMT	135	Introduction to Management	3	MGMT	134	Work Organization	3
MGMT	137A	Safety (OSHA)	3	MGMT	136	Human Relations	3
HM	130	Food and Beverage Management	3	RMGT	132	Nutrition	3
RMGT	131	Food Preparation & Serving	3	RMGT	133	Sanitation & Safety	3
BUS	131	Introduction to Business	3	MATH	137	Business Mathematics	3
PE		Physical Education	1	PE		Physical Education	1
			<hr/>				<hr/>
			16				16

SECOND YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
MGMT	137	Insurance	3	MGMT	139	Income Tax	3
RMGT	135	Food Purchasing	3	MGMT	235	Business Law	3
ENGL	137	Business English	3	RMGT	136	Menu Planning	3
OA	234	Bookkeeping	3	OA	235	Bookkeeping	3
SPCH	233	Business Speech	3	ELECTIVE		Approved Elective	3
PE		Physical Education	1	PE		Physical Education	1
			<hr/>				<hr/>
			16				16

APPROVED ELECTIVES: BUS 231, BUS 232, BUS 236, ET 131, MATH 130, MGMT 230, MGMT 231, MGMT 236, MTNT 141, MTNT 142, MTNT 143, MTNT 144, MTNT 243, MTNT 244, OA 133, OA 134, OA 138, OA 139, TMTH 130

APPLIED MANAGEMENT

HOME APPLIANCE SERVICING OPTION

FIRST YEAR

First Semester			Hours	Second Semester			Hours
Subject				Subject			
MGMT	135	Introduction to Management	3	MGMT	134	Work Organization	3
MGMT	137A	Safety (OSHA)	3	MGMT	136	Human Relations	3
APPR	141	Introduction to Major Appliances	4	ET	141	Direct Current Circuits	4
APPR	142	Resistance Heating Appliances	4	ET	142	Alternating Current Circuits	4
BUS	131	Introduction to Business	3	MATH	137	Business Mathematics	3
PE		Physical Education	1	PE		Physical Education	1
			—				—
			18				18

SECOND YEAR

First Semester			Hours	Second Semester			Hours
Subject				Subject			
MGMT	137	Insurance	3	MGMT	139	Income Tax	3
APPR	241	Motor Driven Appliances	4	MGMT	235	Business Law	3
ENGL	137	Business English	3	APPR	248	Small Appliance Servicing	4
OA	234	Bookkeeping	3	OA	235	Bookkeeping	3
SPCH	233	Business Speech	3	ELECTIVE		Approved Elective	3
PE		Physical Education	1	PE		Physical Education	1
			—				—
			17				17

APPROVED ELECTIVES: BUS 231, BUS 232, BUS 236, ET 131, MATH 130, MGMT 230, MGMT 231, MGMT 236, MTNT 141, MTNT 142, MTNT 143, MTNT 144, MTNT 243, MTNT 244, OA 133, OA 134, OA 138, OA 139, TMTH 130

APPLIED MANAGEMENT

HOME ENTERTAINMENT SERVICING OPTION

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 135	Introduction to Management	3	MGMT 134	Work Organization	3
MGMT 137A	Safety (OSHA)	3	MGMT 136	Human Relations	3
TV 141	Home Music Systems	4	ET 141	Direct Current Circuits	4
TV 145	Electronic Communications Fundamentals	4	ET 142	Alternating Current Circuits	4
BUS 131	Introduction to Business	3	MATH 137	Business Mathematics	3
PE	Physical Education	1	PE	Physical Education	1
		18			18

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 137	Insurance	3	MGMT 139	Income Tax	3
TV 146	Sound Systems	4	MGMT 235	Business Law	3
ENGL 137	Business English	3	TV 149	Television Theory & Servicing	4
OA 234	Bookkeeping	3	OA 235	Bookkeeping	3
SPCH 233	Business Speech	3	ELECTIVE	Approved Elective	3
PE	Physical Education	1	PE	Physical Education	1
		17			17

APPROVED ELECTIVES: BUS 231, BUS 232, BUS 236, ET 131, MATH 130, MGMT 230, MGMT 231, MGMT 236, MTNT 141, MTNT 142, MTNT 143, MTNT 144, MTNT 243, MTNT 244, OA 133, OA 134, OA 138, OA 139, TMTH 130

APPLIED MANAGEMENT

RESIDENTIAL AIR CONDITIONING SERVICING OPTION

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 135	Introduction to Management	3	MGMT 134	Work Organization	3
MGMT 137A	Safety (OSHA)	3	MGMT 136	Human Relations	3
AC 140	Air Conditioning & Refrigeration Theory & Servicing	4	AC 142	Household Refrigeration Systems	4
AC 141	Basic Electrical Circuits	4	AC 143	Heating Systems	4
BUS 131	Introduction to Business	3	MATH 137	Business Mathematics	3
PE	Physical Education	1	PE	Physical Education	1
		18			18

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 137	Insurance	3	MGMT 139	Income Tax	3
ENGL 137	Business English	3	MGMT 235	Business Law	3
OA 234	Bookkeeping	3	AC 144	Residential Air Conditioning	4
SPCH 233	Business Speech	3	OA 235	Bookkeeping	3
ELECTIVE	Approved Elective	3	ELECTIVE	Approved Elective	3
PE	Physical Education	1	PE	Physical Education	1
		16			17

APPROVED ELECTIVES: BUS 231, BUS 232, BUS 236, ET 131, MATH 130, MGMT 230, MGMT 231, MGMT 236, MTNT 141, MTNT 142, MTNT 143, MTNT 144, MTNT 243, MTNT 244, OA 133, OA 134, OA 138, OA 139, TMTH 130

APPLIED MANAGEMENT

SMALL ENGINE SERVICING OPTION

FIRST YEAR

First Semester			Hours	Second Semester			Hours
Subject				Subject			
MGMT 135	Introduction to Management		3	MGMT 134	Work Organization		3
MGMT 137A	Safety (OSHA)		3	MGMT 136	Human Relations		3
SGER 141	Gas Engine Fundamentals		4	SGER 143	Shop Practices		4
SGER 142	Ignition Systems		4	SGER 144	Carburetion, Fuel & Lubricating Systems		4
BUS 131	Introduction to Business		3	MATH 137	Business Mathematics		3
PE	Physical Education		1	PE	Physical Education		1
			18				18

SECOND YEAR

First Semester			Hours	Second Semester			Hours
Subject				Subject			
MGMT 137	Insurance		3	MGMT 139	Income Tax		3
SGER 145	Motorcycle Engine Service		4	MGMT 235	Business Law		3
ENGL 137	Business English		3	SGER 146	Lawn Care Equipment		4
OA 234	Bookkeeping		3	OA 235	Bookkeeping		3
SPCH 233	Business Speech		3	ELECTIVE	Approved Elective		3
PE	Physical Education		1	PE	Physical Education		1
			17				17

APPROVED ELECTIVES: BUS 131, BUS 232, BUS 236, ET 131, MATH 130, MGMT 230, MGMT 231, MGMT 236, MTNT 141, MTNT 142, MTNT 143, MTNT 144, MTNT 243, MTNT 244, OA 133, OA 134, OA 138, OA 139, TMTH 130

COURSE DESCRIPTIONS FOR APPLIED MANAGEMENT OPTIONS

AC 140 Air Conditioning and Refrigeration Theory and Application

(2-4) Credit: 4

This course deals with the basic physical principles of an air conditioning system. Introduction to heat, heat movement, temperature, pressure, refrigerants, temperature pressure relationship to refrigerants, the refrigeration cycle, the major components of refrigeration systems and their relationship to each other. Introduction to the basic electrical devices found in air conditioning systems, i.e., motors, controls, etc. Use of special air conditioning tools and equipment, soldering and welding equipment. The use and care of specialized electrical testing and recording instruments is stressed.

AC 141 Basic Electrical Circuits

(2-4) Credit: 4

Instruction in basic electricity and its application. Introduces the student to the various electrical devices, their importance in electrical circuits, including those used in residential wiring. Methods of wire connections for new and repair service, making and testing electrical circuits, and the use of electrical measuring and testing equipment.

- AC 142 Household Refrigeration Systems** (2-4) Credit: 4
Application to the refrigeration cycle to household refrigeration, including refrigerators, home freezers, and window air conditioning units. Instruction in service procedures for locating and correcting problems in the mechanical and electrical systems of units; trouble shooting, repairing and charging refrigeration equipment. Development of shop skills in the use of special refrigeration tools and equipment. Prerequisites: AC 140 and AC 141.
- AC 143 Heating Systems** (2-4) Credit: 4
The study of types of heating equipment and their application. Service procedures for locating and correcting problems in heating systems. Study of manufacturers information on various heating units and equipment, to enable the student to determine proper installation. Prerequisites: AC 140 and AC 141.
- AC 144 Residential Air Conditioning** (2-4) Credit: 4
Instruction in heat transfer through material, heat loss and heat gain calculations for residential heating and air conditioning systems, equipment selection and location, duct sizing and layout, controls and control circuits, installation and service procedures. Prerequisites: AC 140 and AC 141.
- APPR 141 Introduction to Major Appliances** (2-4) Credit: 4
This course covers an introduction to the theory and application of the different types of major appliances. Practical shop application, safety procedures, use of power and hand tools, test instruments, and use of repair manuals are also included.
- APPR 142 Resistance Heating Appliances** (2-4) Credit: 4
This course covers the theory, repair procedures and trouble shooting techniques on heaters, baking ovens and other types of resistance heating appliances. Prerequisite: APPR 141.
- APPR 241 Motor Driven Appliances I** (2-4) Credit: 4
This course covers the theory and application of home laundry units. Practical experiences include service procedures on the repair of automatic washing machines and both gas and electric clothes dryers. Prerequisite: APPR 141.
- APPR 248 Small Appliance Servicing** (2-4) Credit: 4
This course covers the theory of operation of toasters, hair dryers, electric knives and other small repairable appliances. Practical experiences include service procedures in the repair of these appliances.
- AT 141 Automotive Engines** (2-4) Credit: 4
A course designed to provide an understanding of the fueled internal combustion engine with emphasis on the operation, maintenance, and overhaul of the power plant and its component parts and systems. The proper use of hand tools, measuring tools, and other equipment necessary to effect repairs or rebuilding of the engine with established procedures and proper testing equipment. A special emphasis will be placed on the servicing of the valve train.
- AT 142 Automotive Electrical Systems** (2-4) Credit: 4
A course designed to provide the student with an understanding of the ignition, starting, charging circuits; also alternators, voltage and amperage regulating systems, with special emphasis on testing equipment and electrical skills, in accordance with industry established standards.
- AT 144 Fuel Systems** (2-4) Credit: 4
A course designed to provide an understanding of the theory, fundamentals of operation, and construction of the various types of carburetors, fuel pumps, and components of the fuel system, using established procedures, measuring tools, hand tools, and special testing equipment for testing and adjusting overhauled carburetors.

AT 146 Engine Diagnosis and Emission Control (2-4) Credit: 4

A course designed to provide an understanding of engine trouble-shooting procedures, utilizing oscilloscope analyzer and the theory of operation, adjustment, diagnosis, and repair of all types of emission control devices. Prerequisites: AT 141, AT 142, and completion of, or concurrent enrollment in AT 144.

AT 242 Shop Organization and Management (3-3) Credit: 4

A course designed to provide information and actual experiences in shop management, customer relations, warranty provisions, service salesmanship, organization and lay-out, general business practices, and in the use of time, rate and parts manuals. This course places special emphasis on established business principles and preparation for employment.

ET 131 Technical Mathematics I (3-0) Credit: 3

A study of the basic concepts of math and algebra and the use of the slide rule and the electronic calculator in their manipulation.

ET 135 Assembly Methods (2-3) Credit: 3

A study of modern assembly methods and practices used in industry, including the design, layout and construction of electronic apparatus.

ET 141 Direct Current Circuits (3-3) Credit: 4

A study of the elementary principles of electronics, including DC circuits as related to series and parallel resistive, capacitive, and inductive networks, and the use of Ohm's Law, Kirchoff's Laws, and the power formulas in analyzing these networks.

ET 142 Alternating Current Circuits (3-3) Credit: 4

A study of single and polyphase AC circuits and the use of Kirchoff's Laws, as well as Thevenin's, Norton's, and Superposition Theorems in analyzing these circuits. Prerequisite: ET 141, or equivalent.

ET 143 Introduction to Electron Devices (3-3) Credit: 4

An introduction to vacuum tubes, transistors, and other semiconductors, their composition, characteristics, theory of operation and circuit applications.

ET 144 Basic Test Equipment (3-3) Credit: 4

The use, theory of operation, and repair of the basic electronic test equipment ranging from the VOM through the Dual Beam Oscilloscope.

ET 151 Basic Electricity for Electronics (4-3) Credit: 5

A study of the elementary principles of electricity including voltage, current, resistance, power, magnetism, their relationships and interactions. Mathematics topics covered will include decimals, fractions, scientific notation, roots, powers, exponents, Ohm's Law, power formulas and the laws of series and parallel circuits.

ET 152 Intermediate Electricity for Electronics (4-3) Credit: 5

A study in the principles of basic electricity as related to complex series, parallel, and series-parallel circuits. The use of Kirchoff's Law and Thevenin and Norton's theorems in their analysis. The course will include an introduction to inductance, inductive reactance, capacitance, capacitive reactance as applied to simple series and parallel circuits. Those principles of math to be covered include algebra for complex electronic circuits, simultaneous equations, powers of ten, percentages and an introduction to trigonometry.

ET 153 Advanced Electricity for Electronics (4-3) Credit: 5

A study of AC circuits containing inductive and capacitive reactance combined with resistance for single and polyphase sources and the application of laws and theorems for solving these complex circuits. Math topics covered in this course include trigonometry, efficiencies, impedance matching, inductive and capacitive reactance, Pythagorean theorem, resonant circuits, power factors, logarithmic and mathematical tables.

- HM 130 Food and Beverage Management** (3-0) Credit: 3
This is an introductory course in food and beverage operations, with an introduction to purchasing, receiving, storage, preparation and service.
- MGMT 134 Work Organization** (1-3) Credit: 3
Methods and techniques of planning and organizing work. Principles of time and motion as related to efficient use of worker and work place. Application of work simplification procedures for maximum efficiency of operation. Application of specific programs to current organizational principles.
- MGMT 135 Introduction to Management** (3-0) Credit: 3
This course is designed to give the student a knowledge and understanding of management theories and functions which are essential to the person planning a career in business or industry.
- MGMT 136 Human Relations** (3-0) Credit: 3
A study of "Human Relations" as an emerging scientific discipline of study in which basic concepts and principles concerning man at work are emphasized. It is structured to explain the "whys" and "wherefores" of the behavior of industrial man.
- MGMT 137 Insurance** (3-0) Credit: 3
Introduction to theory and practice of insurance, including life, fire, automobile, and personal and business risk.
- MGMT 137A Safety (OSHA)** (3-0) Credit: 3
A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.
- MGMT 139 Income Tax** (3-0) Credit: 3
Income tax legislation; present income tax law and regulations; treasury decisions, court decisions, and departmental rulings; income tax problems and returns.
- MGMT 230 Credit and Collections** (3-0) Credit: 3
The elements of mercantile and consumer credit; organization of a credit department; sources of credit information; collection tolls and procedures.
- MGMT 231 Marketing and Sales** (3-0) Credit: 3
A study of those aspects of marketing which will achieve a conceptual understanding and serve the needs of business competence. Emphasis is placed on the economic aspect of marketing and the relationship to freedom and democracy.
- MGMT 235 Business Law** (3-0) Credit: 3
Nature and scope of law; court system; law of contracts; principal and agent, business organizations, including partnerships and corporation; Texas community property laws.
- MGMT 236 Business Law** (3-0) Credit: 3
Additional studies in law of business, dealing with bailments, carriers, mortgages, suretyships, negotiable instruments, banks and banking, wills and estate, sales, bankruptcy.
- RMGT 131 Food Preparation and Serving** (3-3) Credit: 3
An introduction to techniques of food preparation. Includes preparation of vegetables, pastries, oven dishes, soups, salads, meats, fish, and poultry. Techniques include experimental cookery, food marketing and preservation, serving and table service.
- RMGT 132 Nutrition** (3-1) Credit: 3
A study of dietary needs; the role of the proteins, fats, carbohydrates, minerals, and vitamins; factors to be considered in proper selection and preparation of foods for maximum nutritional value.

- RMGT 133 Sanitation and Safety** (2-3) Credit: 3
Personal cleanliness; sanitary practices in food preparation; causes, investigation and control of illnesses caused by food contamination; food storage and refrigeration; sanitation of dishes, equipment and kitchens; cleansing materials, garbage and refuse disposal; safety precautions, and accident prevention.
- RMGT 135 Food Purchasing** (2-2) Credit: 3
Applied theory of food and beverage purchasing; factors affecting selection, standards, quality, and prices; techniques of receiving, storing and issuing supplies, foods, and materials; applied theory of cost control, pricing, and portions.
- RMGT 136 Menu Planning** (2-2) Credit: 3
Basic factors of planning menus; variety and nutrition in menu planning; techniques of preparing attractive menus and maintaining budgetary controls; types of menus for various public and private institutions.
- SGER 141 Gas Engine Fundamentals** (2-4) Credit: 4
This course covers the theory and repair practices on two cycle, four cycle and wankel engines, both air cooled and water cooled.
- SGER 142 Ignition Systems** (2-4) Credit: 4
This course covers the theory and repair practices on the various component parts of the ignition system. Proper testing and service procedures are performed on battery ignition systems, solid state ignitions, capacitor discharge systems and on magneto systems.
- SGER 143 Shop Practices** (2-4) Credit: 4
This course covers an introduction to shop safety, use of hand and power tools, use of precision measuring instruments and other special tools used in small engine repairs.
- SGER 144 Carburetion, Fuel and Lubrication Systems** (2-4) Credit: 4
This course is designed to provide the student with knowledge and skills to rebuild and service different types of carburetors, lubrication systems, exhaust systems, flame arrestors that are found on the various types of small gas engines.
- SGER 145 Motorcycle Engine Service** (2-4) Credit: 4
This course is designed to provide the student the necessary skills to disassemble and assemble motorcycle power plants, repair and replace drive train components, use special tools particular to motorcycle repair, and to use applicable parts and service manuals.
- SGER 146 Lawn Care Equipment Service** (2-4) Credit: 4
This course covers the theory and repair practices on all types of power lawn care units including lawn mowers, riding mowers, garden tractors, rotary tillers, and other similar items of equipment.
- TV 141 Home Music Systems** (3-3) Credit: 4
A study in the specifications, theory of operation, and the interrelationships of those components used in the modern home music system; including Stereo and Quad receivers and amps, turntables, tape decks, including reel to reel, eight track, and cassette formats, equalization networks, and mixing systems.
- TV 145 Electronic Communications Fundamentals** (3-3) Credit: 4
Course covers those basic electrical and electronic fundamentals and circuits used in modern applications, such as communications, sound, and test equipment.
- TV 146 Sound Systems** (3-3) Credit: 4
A fundamental course covering the components, specifications, and installation techniques of sound reinforcement, public address, paging, and sound distribution systems.

TV 149 Television Theory and Servicing (3-3) Credit: 4
A study of electron tube and semiconductor circuits peculiar to television receivers and practical methods for trouble shooting and servicing. Prerequisite: TV 145, or equivalent.

RELATED COURSES

BUS 131 Introduction to Business (3-0) Credit: 3
Provides overall picture of business operations; includes analysis of specialized fields within business organizations; identifies role of business in modern society.

BUS 231 Principles of Economics I (3-0) Credit: 3
Introduction to economics analysis; price-level changes; the creation of money; the Federal Reserve System and monetary policy; the national accounts; the consumption function; taxation; fiscal policy, public debt; the theory of economic growth and population problems. (Macroeconomics).

BUS 232 Principles of Economics II (3-0) Credit: 3
Determination of relative prices; consumer demand analysis; the competitive firm; agricultural policy; the monopolistic firm; imperfect competition; business organization and government regulation; determinants of demand; the economic view of taxation and public expenditure; regional economics; international trade and finance; foreign economic policy. (Microeconomics).

BUS 236 Personal Finance (3-0) Credit: 3
Personal and family accounts, budgets, budgeting control, bank accounts, borrowing, investing, standards of living, renting, home ownership.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation, and sentence structure as employed in written business communications. Word study; sentence analysis; punctuation; paragraphing; planning.

MATH 130 Fundamentals of Mathematics (3-0) Credit: 3
Designed for students desiring a review of fundamental algebraic operations. This course may not be used as a part of the requirements for a major in mathematics. Topics considered include operations with signed numbers, exponents, operations with polynomials, factoring, operations on rational expressions, solving linear equations.

MATH 137 Business Mathematics (3-0) Credit: 3
Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.

MTNT 141 Carpentry I (2-4) Credit: 4
This course covers the theory and practical application of the use of basic hand and power tools, safety; an overview of residential and light commercial building construction, including foundations, exterior and interior walls and roof framing.

MTNT 142 Carpentry II (2-4) Credit: 4
This course is a continuation of MTNT 141, with additional emphasis placed on cabinetry, exterior and interior trim and finish work, including door and hardware installation. Prerequisite: MTNT 141 or consent of appropriate college official.

MTNT 143 Electricity I (2-4) Credit: 4
This course covers the theory and practical application of basic electricity, including Ohm's Law, AC/DC circuits, control devices, motor starters, transformers and rectifiers.

- MTNT 144 Electricity II** (2-4) Credit: 4
This course is a continuation of MTNT 143, with special emphasis on electrical maintenance, service and repair procedures for residential and light commercial buildings. Topics of study include wiring with romex cable, exterior and interior lighting systems and motor installation. Prerequisite: MTNT 143, or consent of appropriate college official.
- MTNT 243 Plumbing I** (2-4) Credit: 4
This course covers the theory and practical application of the use of basic hand and power tools used in plumbing; safety; the cutting, threading and joining of different types of pipe.
- MTNT 244 Plumbing II** (2-4) Credit: 4
This course is a continuation of MTNT 243, with special emphasis on plumbing maintenance, service and repair procedures for residential and light commercial buildings. Prerequisite: MTNT 243, or consent of appropriate college official.
- OA 133 Beginning Typewriting** (3-3) Credit: 3
A beginning course in touch typewriting for the mastery of machine parts and the keyboard. Special emphasis on speed development, including an introduction to letter writing, tabulating, and preparing manuscripts.
- OA 134 Intermediate Typewriting** (3-3) Credit: 3
A continuation of OA 133. Additional skill in terms of accuracy and speed will be evidenced by students. Composition and typing of business letters, tabulation, and manuscripts of more demanding content will be introduced.
- OA 138 Business Correspondence** (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.
- OA 139 Business Machines and Calculations** (3-3) Credit: 3
Technique familiarization in the operation of the most commonly used office machines. Computation; calculations; speed drills; percentages, discounts and net values, chain discounts; business forms.
- OA 234 Bookkeeping** (3-3) Credit: 3
Elementary principles of bookkeeping, journalization; posting, statements, special journals; subsidiary ledgers.
- OA 235 Bookkeeping** (3-3) Credit: 3
Analysis and recording of business transactions; use of journal and ledgers; trial balance and work sheets; adjusting and closing entries; accounting statements; payroll records and payroll taxes; introduction to partnership accounting. Special journals and ledgers; business papers and business procedures relating to accounting voucher system.
- SPCH 233 Business Speech** (3-0) Credit: 3
Designed to aid the prospective business or professional person in preparing various types of speaking assignments such as he might encounter in his career. It is planned for agriculture, business, and home economics majors. Emphasis is on structure and techniques of presentation.
- TMTH 130 Technical Mathematics** (3-0) Credit: 3
A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.

ADMINISTRATIVE SECRETARIAL

FIRST YEAR

GENERAL SECRETARIAL

First Semester			Second Semester		
Subject		Hours	Subject		Hours
OA 135	Clerical Practice	3	OA 136	Secretarial Practice	3
OA 131	Beginning Shorthand	3	OA 132	Intermediate Shorthand	3
OA 133	Beginning Typewriting	3	OA 134	Intermediate	
MATH 137	Business Mathematics	3		Typewriting	3
ENGL 137	Business English	3	OA 139	Business Machines and	
PSYC 111	Psychology of Personal &			Calculations	3
	Social Development	1	OA 138	Business	
PE	Physical Education	1		Correspondence	3
		—	PE	Physical Education	1
		16			—
					16

SECOND YEAR

ADMINISTRATIVE SECRETARY

First Semester			Second Semester		
Subject		Hours	Subject		Hours
OA 234	Bookkeeping	3	OA 235	Bookkeeping	3
OA 231	Advanced Shorthand	3	OA 233	Advanced	
OA 232	Advanced Typewriting	3		Transcription	3
BUS 231	Principles of Economics	3	OA 237	Office Administration	
CS 131	Beginning Key punch	3		and Procedures	3
		—	CS 130	Computers & Society	3
		15	ELECTIVE	Approved Elective	3
					—
					15

Levels of Typewriting, Shorthand, and Transcription will be determined by the student's previous training in these skills and/or by placement tests. Students who receive advanced standing in these courses may select approved electives to fulfill hour requirements. Electives appropriate to the student's major will be determined by the appropriate college official.

APPROVED ELECTIVES may be chosen from: BUS 131, BUS 232, BIOL 141, CHEM 140, LE 131, LE 134, MGMT 135, MGMT 235, OA 238, OA 239, PE 235, PSYC 231.

COURSE DESCRIPTIONS FOR OFFICE ADMINISTRATION

OA 131 Beginning Shorthand (3-3) Credit: 3
Introduction to Gregg Shorthand: Reading, writing, theory principles, brief forms.

OA 132 Intermediate Shorthand (3-3) Credit: 3
Continuation of OA 131.

OA 133 Beginning Typewriting (3-3) Credit: 3
A beginning course in touch typewriting for the mastery of machine parts and the keyboard. Special emphasis of speed development, including an introduction of letter writing, tabulating, and preparing manuscripts.

- OA 134 Intermediate Typewriting** (3-3) Credit: 3
A continuation of OA 133. Additional skill in terms of accuracy and speed will be evidenced by students. Composition and typing of business letters, tabulation, and manuscripts of more demanding content will be instructed.
- OA 135 Clerical Practice** (2-1) Credit: 3
Procedures of filing and finding operations employed in business offices, standard filing systems. Training in the operation of spirit duplicators, mimeograph, and dry copy machines. Training in proficiency in handling the mail, telephone techniques, and handling receptionist duties. Considerable emphasis and training in integrating these activities into an office environment will be instructed.
- OA 136 Secretarial Practice** (3-1) Credit: 3
This course is designed for the student who wishes to prepare for a career as an executive secretary. More advanced mailable letters, typing from transcribing machines, organization of meetings and conferences, travel arrangements, information sources, and human relations skills are studied. Students are trained in word processing procedures. Students are introduced to various "needs" theories such as Abraham Maslow's hierarchy of needs. Students are guided into the solution of office problems due to personality problems. Group work, group dynamics and student evaluations are utilized extensively in this course.
- OA 138 Business Correspondence** (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.
- OA 139 Business Machines and Calculations** (3-3) Credit: 3
Technique familiarization in the operation of the most commonly used office machines. Computation; calculations; speed drills; percentages; discount and net values; chain discounts; business forms.
- OA 231 Advanced Shorthand** (3-3) Credit: 3
Improvement of ability to take dictation and transcribe mailable copy. Theory principles; brief form derivatives; vocabulary development; speed building, mailable transcription; and office style dictation.
- OA 232 Advanced Typewriting** (3-3) Credit: 3
This course includes advanced work in such specialized production as tabulation, inter-office correspondence, manuscripts, telegrams, stencil cutting and mimeograph operation, legal forms, medical forms, special inter-office forms, and additional work on the arrangement of business letters with special features.
- OA 233 Advanced Transcription** (3-3) Credit: 3
A continuation of skill building in Gregg Shorthand with concentration on transcribing into mailable copy form office style dictation. Special emphasis will be given to the inter-relatedness of specialized office activities and terminologies as they relate to an administrative secretarial position. Prerequisite: OA 231.
- OA 234 Bookkeeping** (3-3) Credit: 3
Elementary principles of bookkeeping, journalization; posting, statements, special journals, subsidiary ledgers.
- OA 235 Bookkeeping** (3-3) Credit: 3
Analysis and recording of business transactions; use of journal and ledger; trial balance and work sheets; adjusting and closing entries; accounting statements; payroll records and payroll taxes; introduction to partnership accounting; special journals and ledgers; business papers and business procedures relating to accounting; voucher system.

OA 237 Office Administration and Procedures (3-0) Credit: 3
This course is a finishing course through which secretarial and/or clerical students may have an opportunity to relate all information, knowledge, and skills acquired in their academic preparation. Special emphasis will be given to the inter-relatedness of the office in various systems that affect office work.

OA 238 Office Occupations Internship (1-5) Credit: 3
The student will be provided a combination of occupationally related classroom instruction and on-the-job training in cooperation with offices within the Office Administration Department, and other campus offices. Actual work training will be available in the following areas: Typewriting, filing, duplication, use of telephone, preparation of correspondence, voice transcription machines, record-keeping, proof-reading, etc.

OA 239 Office Administration Internship (1-5) Credit: 3
Students will be provided a combination of occupational related classwork instruction and on the job training in cooperation with Office Administration offices and other campus offices. Students will be provided with work experiences in the following areas: taking dictation, typewriting, letter composing, telephone procedures, filing, work scheduling, financial calculating, duplicating, transcribing from dictation, etc.

RELATED COURSES

BIOL 141 General Biology (3-3) Credit: 4
Fundamental principles of living organisms, including chemical and physical properties of life, tissue organization and function, cellular processes, and genetics.

BUS 131 Introduction to Business (3-0) Credit: 3
Provides overall picture of business operation; includes analysis of specialized fields within business organizations; identifies role of business in modern society.

BUS 232 Principles of Economics (3-0) Credit: 3
Determination of relative prices; consumer demand analysis; the competitive firm; agricultural policy; the monopolistic firm; imperfect competition; business organization and government regulation; determinants of demand for productive economic view of taxation and public expenditure; regional economics; international trade and finance; foreign economic policy. (Microeconomics.)

CHEM 140 Introductory Chemistry (3-2) Credit: 4
This course covers the fundamentals of general and descriptive chemistry with applications from modern living, medicine, agriculture, etc. This course is designed for the non-science major, the agriculture major, the home economics major, the nursing major, and any student needing a laboratory science credit.

CS 130 Computers and Society (3-0) Credit: 3
A non-technical survey course intended for non-Computer Science majors, which studies the role that computers play in our society. The purpose is to give a basic, general and accurate picture of what computers are, do and can do and to lay to rest myths and mystiques concerning computers. The effects the computers have had and are having on society are studied and used to project what effects they may have in the future. An introduction to data representation flowcharting and computer program logic is presented to the non-Computer Science major to write a simple computer program.

- CS 131 Beginning Key punching** (1-3) Credit: 3
Elements of keypunch operation. Designed to give the typist beginning skills in keypunch operation. Recommended for all beginning keypunch operators. Drills and exercises to develop punching accuracy and speed. Prerequisite: Typing speed of 30 WPM.
- ENGL 137 Business English** (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.
- LE 131 Introduction to Law Enforcement** (3-0) Credit: 3
History, development and philosophy of law enforcement in a democratic society. Introduction to agencies involved in the administration of criminal justice; career orientation.
- LE 134 Criminal Procedures and Evidence** (3-0) Credit: 3
Introduction to the rules governing the admissibility of evidence and types of evidence; criminal procedure in various courts, review of a model Code of Criminal Procedure, including law of arrest, search and seizure, and leading case law on each topic.
- MATH 137 Business Mathematics** (3-0) Credit: 3
Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.
- MGMT 135 Introduction to Management** (3-0) Credit: 3
This course is designed to give the student a knowledge and understanding of management theories and functions which are essential to the person planning a career in business or industry.
- MGMT 235 Business Law** (3-0) Credit: 3
Nature and scope of law; court system; law of contracts; principal and agent; business organizations, including partnerships and corporation; Texas community property laws.
- PE 235 Safety and First Aid** (3-0) Credit: 3
Health knowledge and practice with regard to individual and group welfare; personal hygiene; community health problems; communicable disease control and health organizations. Instruction in American National Red Cross first aid methods for emergency treatments of injuries and sudden illness.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.
- PSYC 231 Introduction to Psychology** (3-0) Credit: 3
Basic principles of human experience and behavior involving biological, environmental, and sociological studies. An overview course including an introduction to the major studies of psychology. Recommended for students of sophomore standing.

OFFICE MANAGEMENT

FIRST YEAR

OFFICE ASSISTANT

First Semester			Second Semester		
Subject		Hours	Subject		Hours
OA 133	Beginning Typewriting	3	OA 134	Intermediate Typewriting	3
OA 135	Clerical Practice	3	OA 138	Business Correspondence	3
OA 234	Bookkeeping	3	OA 235	Bookkeeping	3
MATH 137	Business Mathematics	3	OA 139	Business Machines and Calculations	3
ENGL 137	Business English	3	MGMT 135	Introduction to Management	3
PSYC 111	Psychology of Personal & Social Development	1	PE	Physical Education	1
PE	Physical Education	1			
		<hr/> 17			<hr/> 16

SECOND YEAR

OFFICE MANAGEMENT OPTION

First Semester			Second Semester		
Subject		Hours	Subject		Hours
MGMT 134	Work Organization	3	MGMT 232	Personnel Management	3
MGMT 136	Human Relations	3	MGMT 236	Business Law	3
MGMT 235	Business Law	3	MGMT 239	Supervision	3
CS 130	Computers and Society	3	OA 237	Office Administration and Procedures	3
SPCH 233	Business Speech	3	ELECTIVE	Approved Elective	3
		<hr/> 15			<hr/> 15

Levels of Typewriting will be determined by the student's previous training in these skills, and/or by placement tests. Students who receive advanced standing in Typewriting may select approved electives to fulfill hour requirements.

APPROVED ELECTIVES may be chosen from MGMT 231, MGMT 239A, OA 238, OA 239. Electives appropriate to the student's major will be determined by appropriate college officials.

COURSE DESCRIPTIONS FOR OFFICE MANAGEMENT

OA 133 Beginning Typewriting (3-3) Credit: 3
A beginning course in touch typewriting for the mastery of machine parts and the keyboard. Special emphasis of speed development, including an introduction of letter writing, tabulating, and preparing manuscripts.

OA 134 Intermediate Typewriting (3-3) Credit: 3
A continuation of OA 133. Additional skill in terms of accuracy and speed will be evidenced by students. Composition and typing of business letters, tabulation, and manuscripts of more demanding content will be instructed.

- OA 135 Clerical Practice** (2-1) Credit: 3
Procedures of filing and finding operations employed in business offices, standard filing systems. Training in the operation of spirit duplicators, mimeograph, and dry copy machines. Training in proficiency in handling the mail, telephone techniques, and handling receptionist duties. Considerable emphasis and training in integrating these activities into an office environment will be instructed.
- OA 138 Business Correspondence** (3-0) Credit: 3
A course designed to teach effective business writing and to give practice in composing all types of business letters and reports.
- OA 139 Business Machines and Calculations** (3-3) Credit: 3
Technique familiarization in the operation of the most commonly used office machines. Computation; calculations; speed drills; percentages; discount and net values; chain discounts; business forms.
- OA 234 Bookkeeping** (3-3) Credit: 3
Elementary principles of bookkeeping, journalization; posting, statements, special journals, subsidiary ledgers.
- OA 235 Bookkeeping** (3-3) Credit: 3
Analysis and recording of business transactions; use of journal and ledger; trial balance and work sheets; adjusting and closing entries; accounting statements; payroll records and payroll taxes; introduction to partnership accounting; special journals and ledgers; business papers and business procedures relating to accounting; voucher system.
- OA 237 Office Administration and Procedures** (3-0) Credit: 3
This course is a finishing course through which secretarial and/or clerical students may have an opportunity to relate all information, knowledge, and skills acquired in their academic preparation. Special emphasis will be given to the inter-relatedness of the office in various systems that affect office work.
- OA 238 Office Occupations Internship** (1-5) Credit: 3
The student will be provided a combination of occupationally related classroom instruction and on-the-job training in cooperation with offices within the Office Administration Department, and other campus offices. Actual work training will be available in the following areas: Typewriting, filing, duplication, use of telephone, preparation of correspondence, voice transcription machines, record-keeping, proof-reading, etc.
- OA 239 Office Administration Internship** (1-5) Credit: 3
Students will be provided a combination of occupational related classwork instruction and on the job training in cooperation with Office Administration offices and other campus offices. Students will be provided with work experiences in the following areas: taking dictation, typewriting, letter composing, telephone procedures, filing, work scheduling, financial calculating, duplicating, transcribing from dictation, etc.

RELATED COURSES

- CS 130 Computers and Society** (3-0) Credit: 3
A non-technical survey course intended for non-Computer Science majors, which studies the role that computers play in our society. The purpose is to give a basic, general and accurate picture of what computers are, do and can do and to lay to rest myths and mystiques concerning computers. The effects the computers have had and are having on society are studied and used to project what effects they may have in

the future. An introduction to data representation flowcharting and computer program logic is presented to the non-Computer Science major to write a single computer program.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.

MATH 137 Business Mathematics (3-0) Credit: 3
Introduction to the arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.

MGMT 134 Work Organization (1-3) Credit: 3
Methods and techniques of planning and organizing work. Principles of time and motion as related to efficient use of worker and work place. Application of work simplification procedures for maximum efficiency of operation. Application of specific programs to current organizational principles.

MGMT 135 Introduction to Management (3-0) Credit: 3
This course is designed to give the student a knowledge and understanding of management theories and functions which are essential to the person planning a career in business or industry.

MGMT 136 Human Relations (3-0) Credit: 3
A study of "Human Relations" as an emerging scientific discipline of study in which basic concepts and principles concerning man at work are emphasized. It is structured to explain the "whys" and "wherefores" of the behavior of industrial man.

MGMT 231 Marketing and Sales (3-0) Credit: 3
A study of those aspects of marketing which will achieve a conceptual understanding and serve the needs of business competence. Emphasis is placed on the economic aspect of marketing and its relationship to freedom and democracy.

MGMT 232 Personnel Management (3-0) Credit: 3
The dynamic role of management as it relates to personnel, with emphasis on the management aspects important to the line executive or supervisor. Personnel functions and procedures are viewed in the light of management objectives, while personnel management is treated as an active and dynamic process which is motivated by basic human drives.

MGMT 235 Business Law (3-0) Credit: 3
Nature and scope of law; court system; law of contracts; principal and agent; business organizations, including partnerships and corporation; Texas Community property laws.

MGMT 236 Business Law (3-0) Credit: 3
Additional studies in law of business, dealing with bailments, carriers, mortgages, suretyships, negotiable instruments, banks and banking, wills and estates, sales, bankruptcy.

MGMT 239 Supervision (3-0) Credit: 3
A course designed to provide an understanding of planning work, leadership, decision making, work problem solving, human behavior and personnel relations.

MGMT 239A Personnel Counseling (3-0) Credit: 3
Systematic study of major theories of personnel counseling with supervised experience in role-playing utilizing these approaches.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

SPCH 233 Business Speech (3-0) Credit: 3
Designed to aid the prospective business or professional person in preparing various types of speaking assignments such as he might encounter in his career. It is planned for agriculture, business, and home economics majors. Emphasis is on structure and techniques of presentation.

PETROLEUM TECHNOLOGY

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
PETT 131	Introduction to Petroleum Technology	3	PETT 133	Rotary Drilling Fluids	3
PETT 132	Petroleum Geology	3	PETT 134	Oil Field Records	3
PETT 141	Rig & Drilling Equipment	4	PETT 142	Petroleum Logging & Mapping	4
CHEM 141	General Chemistry	4	CHEM 142	General Chemistry	4
TMTH 130	Technical Mathematics	3	ENGL 137	Business English	3
PSYC 111	Psychology of Personal & Social Development	1			
		<hr/>			<hr/>
		18			17

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
PETT 231	Pumping Equipment	3	PETT 233	Natural Gas Production	3
PETT 232	Well Completion Methods	3	ELECTIVE	Petroleum Technology Elective	3
PETT 241	Petroleum Production Methods	4	ELECTIVE	Petroleum Technology Elective	3
ENGL 239	Technical Writing	3	PETT 242	Petroleum Refining Methods and Operations	4
MGMT 137A	Safety (OSHA)	3	MGMT 239	Supervision	3
		<hr/>			<hr/>
		16			16

ELECTIVES: PETT 234, PETT 235, PETT 236, PETT 237

COURSE DESCRIPTIONS FOR PETROLEUM TECHNOLOGY

PETT 131 Introduction to Petroleum Technology (3-0) Credit: 3
General study of the industry, including history of the industry chemistry of petroleum, its occurrence in nature and its importance in the world economy, leasing and royalty exploration, drilling and production methods, conservation, transportation and refining, economics of the oil industry.

- PETT 132 Petroleum Geology** (3-0) Credit: 3
A rapid survey course covering the principles of petroleum geology. Topics covered are geographic and stratigraphic distribution, types of structures, properties of petroleum, origin of petroleum, methods of migration, and petroleum discovery methods. Different fields are studied to determine the characteristics of fields as based on different types of traps.
- PETT 133 Rotary Drilling Fluids** (3-0) Credit: 3
Testing methods, determining drilling fluid characteristics, drilling fluid problems, use of special drilling fluids, laboratory exercises consisting of practice in altering the properties of fresh water and special drilling fluids for drilling through troublesome zones with the rotary system.
- PETT 134 Oil Field Records** (3-0) Credit: 3
A study of records kept by oil companies and reports made within companies and to the regulation agencies.
- PETT 141 Rig and Drilling Equipment** (3-3) Credit: 4
Technical information covering the care and use of drilling equipment, hoists, power units, derricks, pumps, and derrick equipment. Trips to examine different types of drilling equipment in actual operation in the field. Also trips to service companies to study their drilling tools.
- PETT 142 Petroleum Logging and Mapping** (3-3) Credit: 4
A study of theories of electrical, micro-electrical radiation, optical chemical, and mechanical well logging methods and application of these theories, field examples and problems.
- PETT 231 Pumping Equipment** (3-0) Credit: 3
A theoretical study of the motors, engines, compressors, and pumps used in the movement of petroleum products; including a survey of the different types of equipment available for specific conditions and loads.
- PETT 232 Well Completion Methods** (3-0) Credit: 3
Included in this course are basic types of completion methods, such as open hole, liner and screen, perforated casing. Permanent type completions and multiple completions are studied. Remedial measures including recompletion, shutting off bottom hole water, reducing high gas oil ratios, sand control, fracturing, and redrilling are studied.
- PETT 233 Natural Gas Production** (3-0) Credit: 3
A survey course in the handling of natural gas, from discovery to use; with emphasis on efficient transportation and the use of proper equipment for distribution. Gas regulations, control and measuring devices will be studied. Three hours lecture each week.
- PETT 234 Petroleum Transportation** (3-0) Credit: 3
A study of the methods and practices of transporting crude and refined petroleum products by pipeline, tanker and by land.
- PETT 235 Petroleum Pollution Control** (3-0) Credit: 3
A study of the various contaminants of air, water, and soil and their effect on ecology. The types of contaminants released by the petroleum industry will be studied. A survey of the various pollutants, their effects on materials, and their control.
- PETT 236 Hydraulics** (3-0) Credit: 3
A study of hydraulics related to drilling, oil, pipelines, and artificial lift.
- PETT 237 Refinery Operations** (3-0) Credit: 3
A study of theoretical and practical approaches to the operation of refinery.

PETT 241 Petroleum Production Methods (3-3) Credit: 4

Various elements of crude oil production are studied, including sub-surface pumps, gas-lifting, emulsion treating, separation of oil and water, separation of oil and gas. Instrumentation of leases is discussed, including flow-meters, automatic lease operation, and automatic custody transfer; also a study of oil field corrosion problems, and secondary recovery methods.

PETT 242 Petroleum Refining Methods and Operations (3-3) Credit: 4

The chemical structure of the hydrocarbon is studied in this course. A survey of modern refining methods of gasoline, petrochemicals and other related chemicals is included.

CHEM 141, 142 General Chemistry (3-4) Credit: 8

A thorough study of the modern concepts and fundamental principles of chemistry. Quantitative experiments are stressed during the first semester of laboratory and the qualitative analysis of the common cation and anions and an introduction to quantitative analysis is studied in the second semester laboratory. The course is designed for science majors and minors. The course includes three hours lecture, one hour recitation, and three hours of laboratory per week. Prerequisite: Two years of high school algebra and MATH 132, or consent of appropriate college official.

ENGL 137 Business English (3-0) Credit: 3

Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.

ENGL 239 Technical Writing (3-0) Credit: 3

The writing of technical reports and business letters.

MGMT 137A Safety (OSHA) (3-0) Credit: 3

A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.

MGMT 239 Supervision (3-0) Credit: 3

A course designed to provide an understanding of: planning work, leadership, decision making, work problem solving, human behavior and personnel relations.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1

Designed to orient the student to college life, and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

TMTH 130 Technical Mathematics (3-0) Credit: 3

A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.

PHOTOGRAPHY

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
PHOT 131	Photographic Principles I	3	PHOT 141	Introductory and Publications Photography	4
PHOT 132	Photographic Principles II	3	PHOT 143	Portrait Photography	4
ENGL 137	Business English	3	PHOT 144	Commercial Photography	4
JOUR 141	Communications Media	4	PHOT 133	Language of Photography	3
MATH 137	Business Mathematics	3			
PSYC 111	Psychology of Personal & Social Development	1			
		<hr/> 17			<hr/> 15

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
PHOT 231	Photography Internship I	3	PHOT 232	Photography Internship II	3
PHOT 242	Portrait Retouching	4	PHOT 244	Advanced Color Photography	4
PHOT 243	Color Photography	4	PHOT 233	Photographic Production	3
ENGL 239	Technical Writing	3	BUS 131	Introduction to Business	3
OA 234	Bookkeeping	3	ELECTIVE	Approved Elective	3
		<hr/> 17			<hr/> 17

APPROVED ELECTIVES: JOUR 142, PHOT 241

COURSE DESCRIPTIONS FOR PHOTOGRAPHY

PHOT 131 Photographic Principles I (2-4) Credit: 3

The course includes elements of composition and film exposure-development for specific gamma, studied sensitometrically, advanced photographic printing, characteristics of papers, processing for contrast, print balance and toning are included. Principles of lenses, use of filters, and advanced focusing techniques are studied.

PHOT 132 Photographic Principles II (2-4) Credit: 3

Continuation of PHOT 131.

PHOT 133 Language of Photography (3-0) Credit: 3

The nature and character of photography, its use by man for communication and expression. Photography as a universal language and how concept, design and execution of the photographic image is utilized in our culture. Prerequisite: PHOT 131 and PHOT 132.

PHOT 141 Introductory and Publications Photography (2-4) Credit: 4

The course teaches the handling of small cameras, film exposure and processing, contact printing and basics of enlarging. Flash and existing light photography are studied. Making news features, action photography, and story-telling photographs; printing and composing photographs for publications are included. Prerequisite: PHOT 131, PHOT 132 or consent of appropriate college official.

- PHOT 143 Portrait Photography** (1-5) Credit: 4
A study is made of fundamental lighting, camera techniques, posing, composition, processing, and printing as applied to portraiture. Retouching negatives and prints, mounting prints and making story-telling pictures for fashion and advertising are emphasized. Prerequisite: PHOT 141 or concurrent enrollment.
- PHOT 144 Commercial Photography** (2-4) Credit: 4
The course stresses press and view camera operation, product and architectural photography, advanced flash techniques, sheet film processing, commercial printing, use of professional cameras, enlargers and application of advanced gamma processing film.
- PHOT 231 Photography Internship I** (0-6) Credit: 3
Supervised off-campus laboratory and work experience in photography or closely allied fields. Students usually work as laboratory technicians, cameramen, and salespersons. Prerequisites: PHOT 131, PHOT 132, PHOT 141, PHOT 143, PHOT 144.
- PHOT 232 Photography Internship II** (0-6) Credit: 3
Supervised off-campus laboratory and work experience in photography or closely allied fields. Students usually work as laboratory technicians, cameramen, and salespersons. Prerequisite: PHOT 231 or consent of appropriate college official.
- PHOT 233 Photographic Production** (2-4) Credit: 3
The student prepares a portfolio of photographs for the mass media, business, education, government, industry, and science for presentation to staff members and to prospective employers. Individualized projects. Prerequisites: PHOT 131, PHOT 132, PHOT 141, PHOT 143, PHOT 144 and PHOT 243.
- PHOT 241 Television Photography** (2-4) Credit: 4
Elementary instruction and practice in movie work for television and allied fields. Laboratory work in editing, splicing continuity, and use and maintenance of motion picture camera.
- PHOT 242 Portrait Retouching** (2-4) Credit: 4
Portrait negatives retouched by the use of leads, dye and etching with special attention to the study of facial structure and demonstrations in printing and retouching negatives. Some color techniques included. Prerequisite: PHOT 143.
- PHOT 243 Color Photography** (2-4) Credit: 4
The course includes study of primary and secondary colors of light, color temperature, color compensations in film exposure, the making of color slides for visual education, theory of color negative systems and demonstrations of Type-C printing.
- PHOT 244 Advanced Color Photography** (2-4) Credit: 4
Positive and negative color film processing, sensitometry, and color printing. Prerequisite: PHOT 243.

RELATED COURSES

- BUS 131 Introduction to Business** (3-0) Credit: 3
Provides an overall picture of business operation; includes analysis of specialized fields within business organizations; identifies role of business in modern society.
- ENGL 137 Business English** (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.
- ENGL 239 Technical Writing** (3-0) Credit: 3
The writing of technical reports and business letters.

- JOUR 141 Communications Media** (3-3) Credit: 4
This course is designed to give the student an understanding and respect for the mass media of the modern world. It includes a survey of all the mass communicative media, their purposes, and methods of operation.
- MATH 137 Business Mathematics** (3-0) Credit: 3
Introduction to arithmetic processes in business, including interest, mortgage, taxes, insurance, payroll, inventory deductions, discounts, depreciation, annuities.
- OA 234 Bookkeeping** (3-3) Credit: 3
Elementary principles of bookkeeping, journalization; posting, statements, special journals; subsidiary ledgers.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

RADIO-TELEVISION SERVICING

FIRST YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
TV 141	Home Music Systems		4	TV 146	Sound Systems		4
TV 145	Electronic Communication Fundamentals		4	TV 147	CATV and MATV Systems		4
ET 135	Assembly Methods		3	TV 149	Television Theory & Servicing		4
ET 144	Test Equipment		4	CM 241	Digital Circuits		4
PSYC 111	Psychology of Personal & Social Development		1				16
			16				

SECOND YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
TV 242	FM-Stereo-Quad		4	TV 235	TV Shop Practices		3
TV 243	Tape Recorders and Turntables		4	TV 239	Advanced Television Servicing		4
ET 242	Advanced Test Equipment		4	ELECTIVE	Technical Elective		4
BUS 131	Introduction to Business		3	ELECTIVE	Technical Elective		4
ELECTIVE	Technical Elective		4	ENGL	Approved English		3
			19				18

TECHNICAL ELECTIVES: TV 241, TV 244, TV 245, TV 246, TV 247, ET 245, ET 247. Technical electives must be approved by appropriate college official prior to registration. TV 235 may be taken twice for credit, with official approval, provided a different category of electronic equipment is covered.

ENGL 239 — Technical Writing is suggested.

Students working toward an Associate in Applied Science degree must take ENGR 131 — Engineering Graphics and ENGL 137 — Business English during their first year. These courses may be taken during the first and second semesters of the first year, or during the semester immediately following.

COURSE DESCRIPTIONS FOR RADIO-TELEVISION SERVICING

- TV 141 Home Music Systems** (3-3) Credit: 4
A study in the specifications, theory of operation, and the inter-relationships of those components used in the modern home music system, including Stereo and Quad receivers and amps, turntables, tape decks, including reel to reel, eight track, and cassette formats, equalization networks, and mixing systems.
- TV 145 Electronic Communications Fundamentals** (3-3) Credit: 4
Course covers those basic electrical and electronic fundamentals and circuits used in modern day applications, such as communications, sound, and test equipment.
- TV 146 Sound Systems** (3-3) Credit: 4
A fundamental course covering the components, specifications, and installation techniques of sound reinforcement, public address, paging, and sound distribution systems.
- TV 147 CATV and MATV Systems** (3-3) Credit: 4
Course covers fundamentals of design and servicing of TV antenna and head end systems and the distribution of TV signals in small or large "cable" systems.
- TV 149 Television Theory and Servicing** (3-3) Credit: 4
A study of electron tube and semiconductor circuits peculiar to television receivers and practical methods for trouble-shooting and servicing. Prerequisite: TV 145, or equivalent.
- TV 235 TV Shop Practices** (1-6) Credit: 3
An in-depth study of basic procedures used in the modern TV shop. Includes record keeping, stocking and order procedures, shop management, and advanced techniques of TV repair. Prerequisite: TV 149, or equivalent.
- TV 241 Music System Servicing** (3-3) Credit: 4
A study in the analysis, diagnosis, and correction of a wide range of problems that appear in modern electronic music systems. Prerequisite: TV 242.
- TV 242 FM — Stereo — Quad** (3-3) Credit: 4
An in-depth study of the circuitry, both discrete and integrated, used in today's AM and FM tuner amps, including both two and four channel multiplexing. Prerequisite: TV 141 and TV 145.
- TV 243 Tape Recorders and Turntables** (3-3) Credit: 4
A study of both the mechanics (including gears, pulleys, belts, and drive mechanisms), and electric circuits (for amplification, biasing, and equalization) in tape recorders and turntables. Prerequisite: TV 141 and TV 145.
- TV 244 VTR's** (3-3) Credit: 4
The basic theory, operation and repair of video tape recorders used in both home and industry. Emphasis is placed on the video aspect of these recorders. Prerequisite: TV 243.
- TV 245 Electronic Trouble- Shooting** (3-3) Credit: 4
A study of those trouble-shooting techniques that apply to certain categories of electronic equipment. This course may be taken twice for credit with the approval of the appropriate college official, provided a different category of equipment is covered. Prerequisite: TV 242.

TV 246 Sound System Design and Servicing (3-3) Credit: 4
Course covers those peculiar problems of sound reinforcement and distribution systems that can be encountered due to building design, speaker and microphone placement, as well as routine problems. Prerequisite: TV 146.

TV 247 Closed Circuit TV (3-3) Credit: 4
The principles of closed circuit television systems and components, including the theory and servicing techniques as applied to cameras, monitors, and coupling networks. Prerequisite: TV 149.

TV 249 Advanced Television Servicing (2-4) Credit: 4
The operation and service of the more complicated television receiver circuits are covered in this course. Special attention is given to the use of techniques and equipment for the most economical solutions to difficult problems. Includes an introduction to transistorized and color television. Prerequisite: TV 149.

RELATED COURSES

BUS 131 Introduction to Business (3-0) Credit: 3
Provides overall picture of business operation; includes analysis of specialized fields within business organizations; identifies role of business in modern society.

CM 241 Digital Circuits (3-3) Credit: 4
A review of the basic gates and gating networks used in digital circuits, and an intensive study of Boolean Algebra, as well as the theory and operation of flip-flop, registers, and counter circuits. The course also covers numbering systems, arithmetical circuitry, and control element circuitry.

ET 135 Assembly Methods (2-3) Credit: 3
A study of modern assembly methods and practices used in industry, including the design, layout, and construction of electronic apparatus.

ET 144 Basic Test Equipment (3-3) Credit: 3
The use, theory of operation, and repair of the basic electronic test equipment ranging from the VOM through the Dual Beam Oscilloscope.

ET 242 Advanced Test Equipment (3-3) Credit: 4
The use and calibration of test equipment used in servicing complex electronic hardware. Observation of waveforms of electronic apparatus. Prerequisite: ET 144, or equivalent.

ET 245 Communications Circuits I (3-3) Credit: 4
A study of those basic circuits used throughout industry today. Prerequisite: ET 143, or equivalent.

ET 247 Communications Circuits II (3-3) Credit: 4
A study of communications circuits necessary for the successful acquisition of an FCC first class license. Prerequisite: ET 245, or equivalent.

ENGR 131 Engineering Graphics (2-4) Credit: 3
Freehand and instrument drawing, dimensioning, fastening, pictorial methods, charts, and graphs, projection drawings, geometry of graphical construction.

ENGL 137 Business English (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communication. Word study: Sentence analysis; punctuation; paragraphing; planning.

ENGL 239 Technical Writing (3-0) Credit: 3
The writing of technical reports and business letters.

PSYC 111 Psychology of Personal and Social Development (1-0) Credit: 1
 Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

SMALL GAS ENGINE REPAIR

FIRST YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
SGER 141	Gas Engine Fundamentals	4	SGER 144	Carburetion, Fuel & Lubrication Systems	4
SGER 142	Ignition Systems	4	SGER 145	Motorcycle Engine Service	4
SGER 143	Shop Practices	4	SGER 146	Lawn Care Equipment Service	4
TMTH 130	Technical Mathematics	3	ENGL 137	Business English	3
PSYC 111	Psychology of Personal & Social Development	1	WELD 146	Welding Fundamentals	4
		16			19

SECOND YEAR

First Semester			Second Semester		
Subject		Hours	Subject		Hours
SGER 241	Advanced Motorcycle Service	4	SGER 244	Stationary Power Plant Service	4
SGER 242	Chain Saw Service	4	SGER 245	Recreational Vehicle Engine Service	4
SGER 243	Marine Inboard/Outboard Service	4	SGER 246	Special Projects	4
MGMT 137A	Safety (OSHA)	3	MGMT 239	Supervision	3
		15			15

COURSE DESCRIPTIONS FOR SMALL GAS ENGINE REPAIR

SGER 141 Gas Engine Fundamentals (2-4) Credit: 4
 This course covers the theory and repair practices on two cycle, four cycle and wankel engines, both air cooled and water cooled.

SGER 142 Ignition Systems (2-4) Credit: 4
 This course covers the theory and repair practices on the various component parts of the ignition system. Proper testing and service procedures are performed on battery ignition systems, solid state ignitions, capacitor discharge systems and on magneto systems.

SGER 143 Shop Practices (2-4) Credit: 4
 This course covers an introduction to shop safety, use of hand and power tools, use of precision measuring instruments and other special tools used in small engine repairs.

SGER 144 Carburetion, Fuel and Lubrication Systems(2-4) Credit: 4
 This course is designed to provide the student with the knowledge and skills to re-build and service different types of carburetors, lubrication systems, exhaust systems, flame arrestors that are found on the various types of small gas engines.

- SGER 145 Motorcycle Engine Service** (2-4) Credit: 4
This course is designed to provide the student the necessary skills to disassemble and assemble motorcycle power plants, repair and replace drive train components, use special tools particular to motorcycle repair, and to use applicable parts and service manuals.
- SGER 146 Lawn Care Equipment Service** (2-4) Credit: 4
This course covers the theory and repair practices on all types of power lawn care units, including lawn mowers, riding mowers, garden tractors, rotary tillers, and other similar items of equipment.
- SGER 241 Advanced Motorcycle Repair** (2-4) Credit: 4
This course is a continuation of SGER 145 with special emphasis on chassis and system repair including front and rear suspension systems, hub and wheel repair, transmissions and brakes. Prerequisite: SGER 145.
- SGER 242 Chain Saw Service** (2-4) Credit: 4
This course covers the theory and repair practices on all types of modern chain saws and related equipment.
- SGER 243 Marine Inboard/Outboard Service** (2-4) Credit: 4
This course covers the theory and practical lab work including disassembly and assembly of the power head and lower drive unit, analysis of engine malfunctions, component inspection, use of special tools and the use of service and parts manuals that are applicable to marine inboard/outboard engines.
- SGER 244 Stationary Power Plant Service** (2-4) Credit: 4
This course covers the theory and repair practices necessary on stationary power plants, self-contained generating units and related units.
- SGER 245 Recreational Vehicle Engine Service** (2-4) Credit: 4
This course covers the theory and repair practices that are necessary to service snowmobiles, off-the-road vehicles and other related units.
- SGER 246 Special Projects** (2-4) Credit: 4
The purpose of this course is to allow the student to develop one or more special projects related to small gas engine repair under the supervision of the program instructor. Prerequisite: Sophomore standing and 24 semester hours of Small Gas Engine Repair courses.

RELATED COURSES

- ENGL 137 Business English** (3-0) Credit: 3
Fundamentals of grammar, punctuation and sentence structure as employed in written business communications. Word study; sentence analysis; punctuation; paragraphing; planning.
- MGMT 137A Safety (OSHA)** (3-0) Credit: 3
A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.
- MGMT 239 Supervision** (3-0) Credit: 3
A course designed to provide an understanding of: planning work, leadership, decision making, work problem solving, human behavior and personnel relations.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 1
Designed to orient the student to college life, and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

TMTH 130 Technical Mathematics

(3-0) Credit: 3

A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, slide rule and calculating machines.

WELD 146 Welding Fundamentals

(2-4) Credit: 4

Electric oxy-acetylene welding and torch cutting. Making fusion welds in all positions with both the electric and oxy-acetylene welding. Using the hand cutting torch and cut-a-line cutting machine. (Special industrial application.)

TELECOMMUNICATIONS

FIRST YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
TELE	131	Introduction to Broadcasting	3	TELE	133	Beginning Television Production	3
TELE	132	Beginning Radio Production	3	TELE	134	Station Sales/Management	3
TELE	135	Radio-Television Announcing	3	JOUR	142	News Writing	4
JOUR	141	Communications Media	4	ENGL	132	Composition & Rhetoric	3
ENGL	131	Composition & Rhetoric	3	SPCH	131	Introduction to Speech	3
PSYC	111	Psychology of Personal & Social Development	1				16
			—				
			17				

SECOND YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
TELE	231	Television Film I	3	TELE	232	Advanced Television Production	3
TELE	233	Advanced Radio Production	3	TELE	236	Communications Law	3
TELE	234	Broadcast Operations	3	TELE	237	Television Film II	3
TELE	235	Broadcast Writing	3	TELE	238	Telecommunications Practicum	3
ELECTIVE		Approved Elective	3	ELECTIVE		Approved Elective	3
			—				—
			15				15

ELECTIVES: TELE 239A, TELE 239B, TELE 239C, TELE 239D. Electives must be approved by the appropriate college official.

Prerequisites or their equivalents are required for non-broadcasting majors taking Telecommunications courses above the Freshman level.

COURSE DESCRIPTIONS FOR TELECOMMUNICATIONS

TELE 131 Introduction to Broadcasting

(3-3) Credit: 3

This is a survey course tracing the history of broadcasting from 1884 to the present. Besides history, the course will present information on comparative systems of broadcasting and on the basic operational procedures of radio and television stations. Preparation for the FCC Radio-Telephone Operator's Third Class Permit is included in this course of study.

TELE 132 Beginning Radio Production

(3-3) Credit: 3

In this course the fundamental techniques and practices of production and programming are emphasized with a great deal of practical experience in an actual radio studio. Production of various types of programs including interviews, documentaries, and basic news will be studied. Each student will be trained to competently operate a radio control board, turntables, and tape recorders.

TELE 133 Beginning Television

(3-3) Credit: 3

This course is designed to give the student the fundamental skills of camera operation, microphone techniques, basic set design, basic graphics, and lighting. In addition, each student will produce and direct his own commercials. A basic study of the operations of a television station will be covered.

TELE 134 Station Sales/Management

(3-0) Credit: 3

This course is designed to give the student a working knowledge of the broadcast industry; how individual radio and television stations program, sell spots and time, set up management responsibilities, negotiate scheduling with network, and advertising. It also covers the legal and ethical aspects of broadcasting through use of FCC Rules and Regulations. Audience measurement and what it means will also be studied.

TELE 135 Radio-Television Announcing

(3-3) Credit: 3

This course covers the duties and responsibilities of the announcer, such as operation of the audio console, announcing commercial copy, announcing station breaks, newscasting, interviewing, etc. Special emphasis is given in the area of voice and diction and pronunciation. Practical experience will be offered through the use of actual radio and television studios.

TELE 231 Television Film I

(3-3) Credit: 3

This course is designed to introduce the student to the fundamentals of cinematography and its applications in the television industry. Basic filming techniques will be covered, and each student will learn to shoot 16mm motion picture cameras, edit, story board, and process film. Laboratory exercises will provide for the shooting of at least 200 feet of film per student.

TELE 232 Advanced Television Production

(3-3) Credit: 3

This course offers advanced training in television production. Included will be experience as cameraman, floor director, talent, lighting, director, technical director, producer, graphics, film director, video tape operator, and audio engineer. Practical experience in weekly television program production will be available through the use of an actual television station. In addition, a critical look will be given to television programming techniques, types of station structure, and innovative technological breakthroughs.

TELE 233 Advanced Radio Production

(3-3) Credit: 3

The major emphasis in this course is advanced training in the production of radio commercials, promotion announcements, documentaries, newscasting and interviewing. An in-depth study of the programming formulas and different types of radio broadcasting is presented. Each student will be responsible for weekly programming to be aired over an actual radio station.

TELE 234 Broadcast Operations

(3-3) Credit: 3

This course is designed to provide the student of broadcasting with specific areas of study in promotion, graphics, traffic, continuity, and programming for both radio and television. The laboratory for this course will be the study of an implementation of an assessment of audience needs survey.

TELE 235 Broadcast Writing (3-3) Credit: 3

This course covers the stylistic writing techniques as needed for commercial copy, promotional copy, news editing, radio-television show formats, and individualistic creative writing for drama or documentaries. Practical experience will be available through actual radio and television stations.

TELE 236 Communications Law (3-0) Credit: 3

This course is an in-depth study of the Federal Communications Commission Rules and Regulations, treaties, and laws pertaining to the overall production of the broadcast station; a survey of copyright laws, libel and slander laws, contracts and other legal responsibilities associated with broadcasting.

TELE 237 Television Film II (3-3) Credit: 3

Advanced film production, color processing and editing are covered. Much emphasis is given to news photography and on-the-job training. Students will be given weekly film assignments for actual television daily newscasts.

TELE 238 Telecommunications Practicum (1-6) Credit: 3

The purpose of this course is to give each student an opportunity to receive practical experience in a specialized area of study. A student may choose his individual study practicum from any of the following broadcast-related areas; graphic arts set design, photography, cinematography, broadcast journalism, radio production, television production, broadcast promotion, traffic and continuity.

TELE 239A Technical Aspects of Broadcasting (3-0) Credit: 3

This course will offer invaluable practical experience to the student because he will be usually working under the pressure of time; each student will be participating in live newscasts over actual radio and television stations. In-depth news reporting, editing methodology, and news writing, as well as technical production will be covered.

TELE 239B Telecommunications Field Projects (1-5) Credit: 3

The field projects will constitute an on-the-job training experience for all students. The laboratory portion will place the student in responsible production positions for on-air broadcast activities on actual radio and/or television stations. Each student will produce and direct at least three major TV or radio programs on a regularly scheduled basis. In conjunction with this practical training, the student will compile a daily log of his work experience for in-class discussion and criticism. Prerequisite: TELE 133.

TELE 239C Telecommunications Seminar (3-0) Credit: 3

This seminar is designed to allow the student of broadcasting to take an in-depth look at the industry he will soon serve. Individual investigation will be conducted on the current trends in broadcasting, major issues facing the broadcaster, and the importance of broadcasting in today's society. Considerable discussion on such issues as freedom of the press and the future of broadcasting will take place. This course will give the student an up-to-date and realistic perspective of his chosen industry.

TELE 239D Telecommunications Field Projects (1-5) Credit: 3

A continuation of TELE 239B, this course consists of on-the-job training as a production member of an actual radio or television station for on-air operations. Prerequisite: TELE 239B.

RELATED COURSES

ENGL 131 Composition and Rhetoric (3-0) Credit: 3

Composition of short papers, with emphasis on sentence structure, paragraph development, and paper organization. Analysis of expository prose.

- ENGL 132 Composition and Rhetoric** (3-0) Credit: 3
An introduction to literature: the short story, poetry, drama, and the novel. Composition of short papers with emphasis on interpretation and analysis of literary selections, optional research paper. Prerequisite: ENGL 131 or advanced standing.
- JOUR 141 Communications Media** (3-3) Credit: 4
This course is designed to give the student an understanding and respect for the mass media of the modern world. It includes a survey of all the mass communicative media, their purposes, and methods of operation.
- JOUR 142 News Writing** (3-3) Credit: 4
Designed to acquaint the student with fundamental news gathering and writing techniques for the print medium. It includes instruction and practice in interviewing, writing, and discussion of news sources and values.
- PSYC 111 Psychology of Personal and Social Development** (1-0) Credit: 1
Designed to orient the student to college life and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.
- SPCH 131 Fundamentals of Speech** (3-0) Credit: 3
Instruction is given in speech preparation and delivery with emphasis on communication through audience analysis, gesturing, and vocal variety. Students will have the opportunity for practice in the researching, outlining, and presentation of speeches.

WELDING TECHNOLOGY

FIRST YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
WELD 141	Beginning Gas Welding		4	WELD 151	Advanced Arc Welding		5
WELD 142	Beginning Arc Welding		4	WELD 152	Advanced Welding		
DD 134	Blueprint Reading		3		Processes (MIG & TIG)		5
TMTH 130	Technical Mathematics		3	ENGL 137	Business English		3
PSYC 111	Psychology of Personal & Social Development		1	DD 131	Engineering Graphics		3
			<hr/>				<hr/>
			15				16

SECOND YEAR

First Semester				Second Semester			
Subject			Hours	Subject			Hours
WELD 153	Weld Test Methods		5	WELD 155	Advanced Fabrication		
WELD 154	Welding Fabrication and Lay-Out		5		Methods		5
MGMT 137A	Safety (OSHA)		3	WELD 156	Pipe Welding		5
ENGL 239	Technical Writing		3	WELD 157	Structural Welding		5
			<hr/>	MGMT 239	Supervision		3
			16				<hr/>
							18

COURSE DESCRIPTIONS FOR WELDING TECHNOLOGY

- WELD 141 Beginning Gas Welding** (2-4) Credit: 4
Intensive classroom instruction will be conducted in oxy-acetylene welding. Fusion type welds will be made under a variety of positions, conditions, and materials. Instruction will include use and operation of oxy-acetylene cutting torch.

- WELD 142 Beginning Arc Welding** (2-4) Credit: 4
Intensive classroom instruction will be conducted in electric arc welding. Welds will be made in all positions with various types of electrodes. A basic understanding of metal properties and characteristics will accompany all instructional materials.
- WELD 151 Advanced Arc Welding** (2-6) Credit: 5
Theory and practice of shielded metal arc welding on tests required by industry. Emphasis will be placed on preparing the student for certification tests. Prerequisite: WELD 142.
- WELD 152 Advanced Welding Processes (MIG & TIG)** (2-6) Credit: 5
Theory and practice of MIG & TIG welding. Course to include study of shielding gases used in these processes.
- WELD 153 Weld Testing Methods** (2-6) Credit: 5
Theory and practice of making basic destructive and non-destructive weld tests. This will include guided bend, nick break, liquid penetrant, and magnetic particle testing. Prerequisite: WELD 142.
- WELD 154 Welding Fabrication and Lay-Out** (2-6) Credit: 5
Practical application of steel fabrication and general lay-out work. Blueprint with welding symbols will be used on all projects. Prerequisites: WELD 142 and DD 130.
- WELD 155 Advanced Fabrication Methods** (2-6) Credit: 5
The advanced welding student selects and develops comprehensive welding fabrication project under the direction of the supervising instructor. Special emphasis is placed on the utilization of special metals, including stainless steel, carbon steel, aluminum and the newer space-age exotic metals. Prerequisite: WELD 154.
- WELD 156 Pipe Welding** (2-6) Credit: 5
This course covers the theory and practice of the arc welding of pipe in roll-out and in horizontal positions. Different sizes, schedules and materials of pipe are used in the course. Special emphasis is placed on preparing for pipe welding certification examinations. Prerequisite: WELD 151 and WELD 152.
- WELD 157 Structural Welding** (2-6) Credit: 5
This course covers the theory and practice of arc welding on the various structural steel shapes used in the construction and steel fabrication industry. Special emphasis is placed on preparing for the various welding certification examinations. Prerequisite: WELD 151.

RELATED COURSES

- DD 131 Engineering Graphics** (2-4) Credit: 3
Freehand and instrument drawing, dimensioning, fastening, pictorial methods, charts and graphs, projection drawings, geometry of graphical construction.
- DD 134 Blueprint Reading** (3-0) Credit: 3
The fundamentals of blueprint reading for the construction trades. The course includes familiarization with standard terms, sizes, scales, estimating and commercial practice.
- ENGL 137 Business English** (3-0) Credit: 3
Fundamentals of grammar, punctuation, and sentence structure as employed in written business communications. Word study; sentence analysis; punctuation; paragraphing; planning.
- ENGL 239 Technical Writing** (3-0) Credit: 3
The writing of technical report and business letters.

MGMT 137A Safety (OSHA)

(3-0) Credit: 3

A study of safety as it relates to the military, industrial and business communities. Special emphasis will be given the requirements of the Occupational Health and Safety Act as it affects management and employees.

MGMT 239 Supervision

(3-0) Credit: 3

A course designed to provide an understanding of: Planning work, leadership, decision making, work problem solving, human behavior and personnel relations.

PSYC 111 Psychology of Personal and Social Development

(1-0) Credit: 1

Designed to orient the student to college life, and to help him to understand personal problems, such as separation from family, study habits, use of time, vocational choices.

TMTH 130 Technical Mathematics

(3-0) Credit: 3

A course designed to fill the needs of students in industrial and technical programs. To perform calculations and measurements and to solve mathematical problems for the shop, construction site, design and drafting rooms. It covers arithmetic fundamentals, development of "number sense", basic algebra, geometry, and the elements of the slide rule and calculating machines.