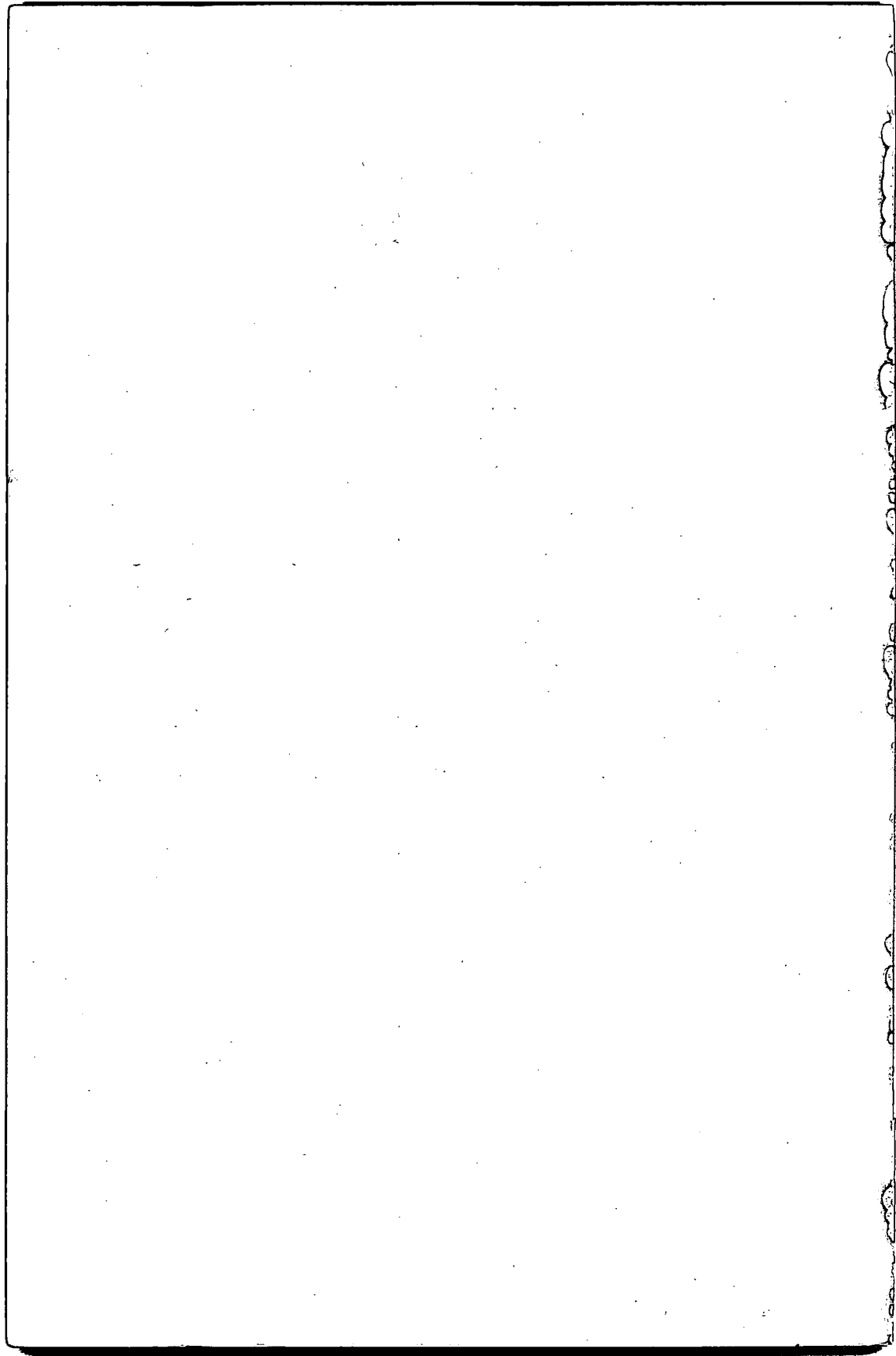


Bernice Harris



**1976-77 Bulletin of
LAMAR UNIVERSITY
College of Technical Arts**



Lamar University

1976-77 College of Technical Arts Bulletin

Vol. 26 NO. 4 MARCH 1976

TWENTY-SECOND ANNUAL CATALOG ISSUE

With Announcements for 1976-77

Founded in 1923, and established as a four-year coeducational state-supported college on September 1, 1951.

The courses, tuition and fees and all other conditions and policies set forth in this catalog issue shall be subject to change without notification.

Lamar University is an equal opportunity/affirmative action educational institution and employer. Students, faculty and staff members are selected without regard to their race, color, creed, sex, or national origin, consistent with the Assurance of Compliance with Title VI of the Civil Rights Act of 1964; Executive Order 11246 as issued and amended, and Title IX of the Education Amendments of 1972, as amended. Inquiries concerning application of Title IX may be referred to the Vice-president for Administration.

Bulletin of Lamar University. Second class postage paid at Beaumont, Texas 77710. Published monthly except in June, July and August.

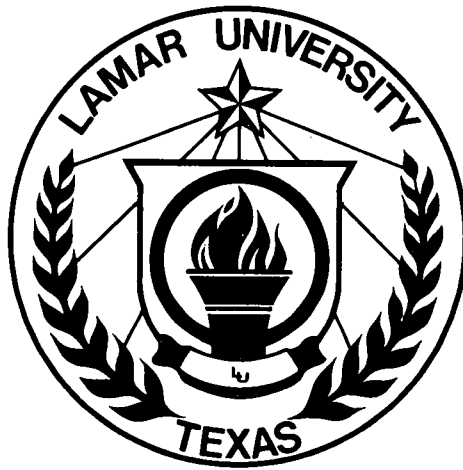
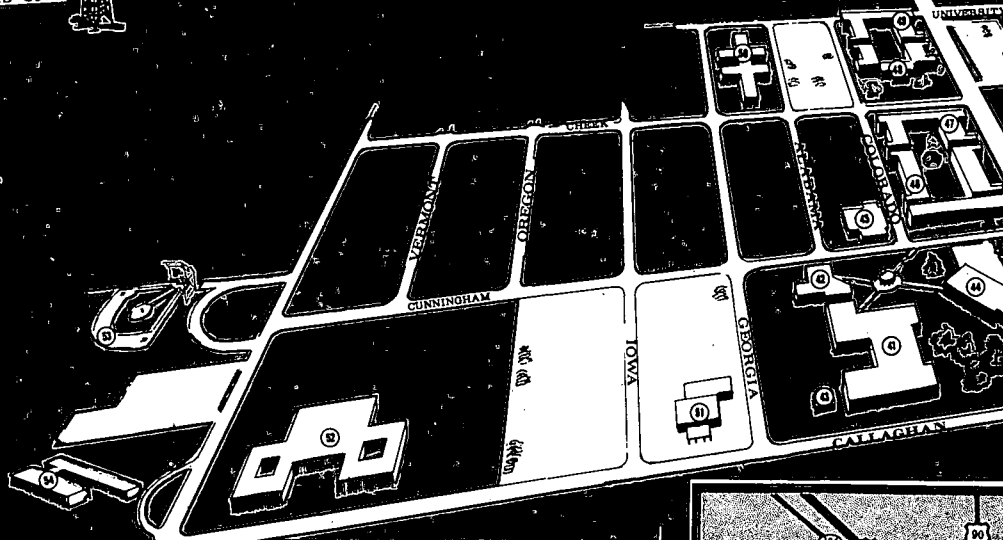


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GLADYS CITY



Register of Offices

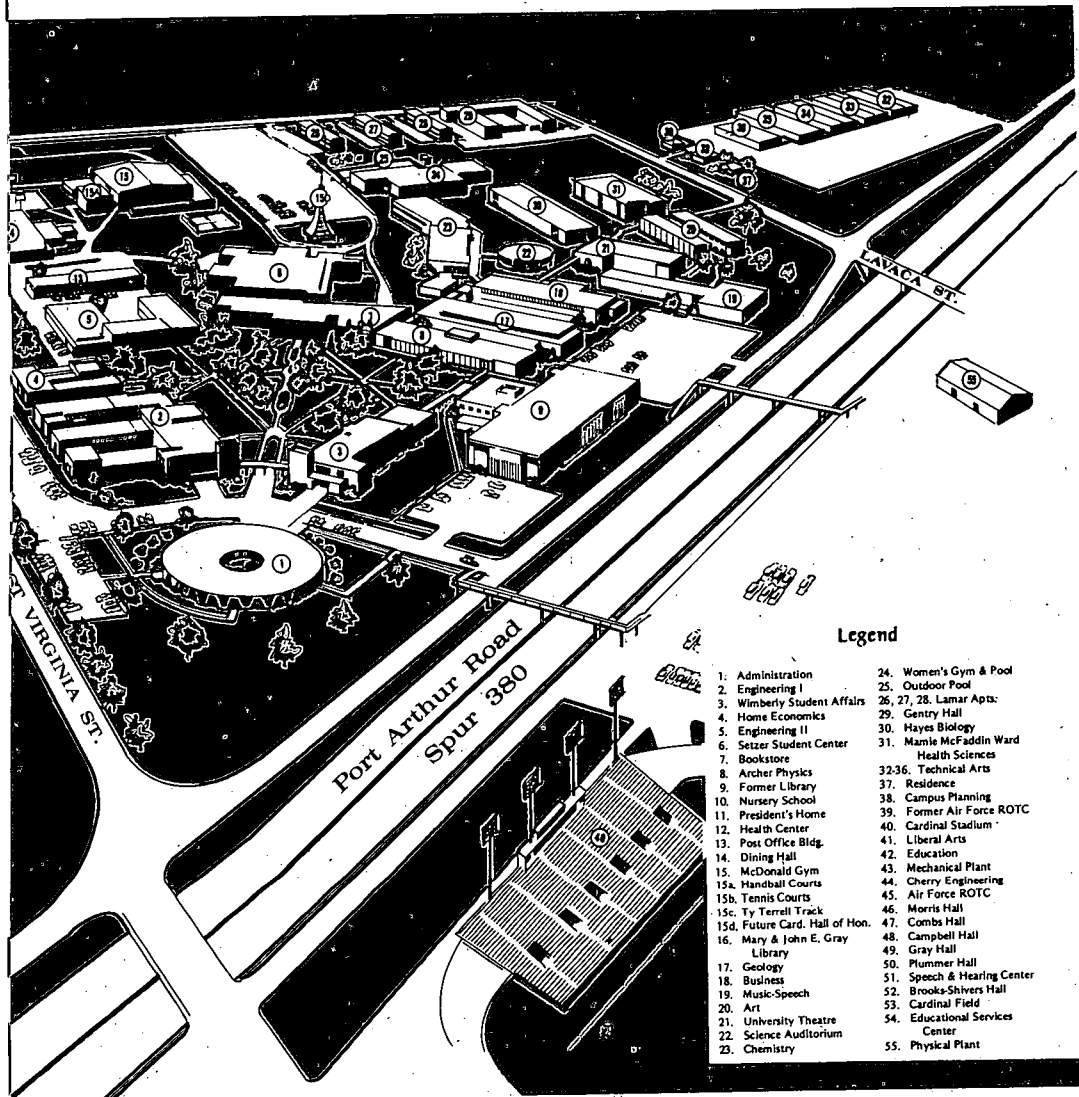
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The Campus

Lamar University's campus has expanded rapidly during the past decade and now encompasses some 200 acres. Under construction are the Mamie McFaddin Ward Health Sciences and ROTC buildings which are expected to be completed in 1976 as is a campus landscaping and beautification project. A new Speech and Hearing Center and the eight-story Mary and John E. Gray Library were opened during the last year.

Guidelines for future expansion of the campus are included in a conceptual master plan which will guide development into the year 2000. A large portion of the master plan has been approved by the University's Board of Regents.



Architects have placed strong emphasis upon developing a feeling of "monumentality and dignity" with the Library as the dominant focus of the campus. A number of high-rise buildings or towers are planned. A 4,500-seat auditorium and a 12,000 coliseum also are under consideration.

1976-77 Calendar

FALL SEMESTER

S M T W T F S

1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31

1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30

1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31

AUGUST 1976

- 22 Dormitories open.
Dining halls open.
- 23 Faculty and staff meetings.
Registration begins.
- 24 Registration.
- 25 Registration.
- 26 Classes begin.
- 26-31 Schedule revisions—late registration.
- 31 Last day for schedule revision
and/or late registration.

SEPTEMBER

- 6 Labor Day holiday.
- 13 Twelfth class day.

OCTOBER

- 11-15 Mid-semester week.
- 18 Last day to apply for December graduation.
Last day to pay for diploma; cap and gown.
- 20 Unsatisfactory grades due by noon.
- 29 Last day to drop or withdraw without penalty.

NOVEMBER

- 24 Thanksgiving holidays begin at 10 p.m.
Dining halls and dormitories close.
- 28 Dining halls and dormitories open.
- 29 Classes resume at 8 a.m.

DECEMBER

- 8 Last day to drop or withdraw.
- 13-17 Final examinations.
- 17 Grades for graduating seniors due by 4:30 p.m.
- 18 Commencement.
- 21 All grades due by noon.

SPRING SEMESTER

JANUARY 1977

S	M	T	W	T	F	S
						1
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

- 9 Dormitories open.
Dining halls open.
- 10 Registration begins.
- 11 Registration.
- 12 Registration.
- 13 Classes begin.
- 13-18 Schedule revisions—late registration.
- 18 Last day for schedule revisions and/or late registration.
- 28 Twelfth class day.

MARCH

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

- 7-11 Mid-semester week.
- 21 Last day to apply for May graduation.
Last day to pay for diploma; cap and gown.
- 23 Unsatisfactory grades due by noon.

APRIL

				1	2
3	4	5	6	7	8
9	10	11	12	13	14
15	16	17	18	19	20
21	22	23	24	25	26
27	28	29	30	31	

- 1 Last day to drop or withdraw without penalty.
Spring recess begins at 5 p.m.
Dining halls and dormitories close.
- 10 Dining halls and dormitories open.
- 11 Classes resume at 8 a.m.

MAY

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

- 2 Last day to drop or withdraw.
- 5-11 Final examinations.
- 13 Grades for graduating seniors due by 8:30 a.m.
- 14 Commencement.
All grades due by noon.

**SUMMER SESSION
FIRST TERM**

MAY

- 30 Registration.
- 31 Classes begin.

JUNE

- 1 Last day for schedule revisions and/or late registration.
- 3 Fourth class day.
- 14 Last day to drop or withdraw without penalty.

JULY

- 1 Last day to apply for August graduation.
Last day to pay for diploma; cap and gown.
Last day to drop or withdraw.
- 4 Independence Day holiday.
- 6 Last class day.
- 8 All grades due by noon.

S M T W T F S

				1	2	3	4
5	6	7	8	9	10	11	
12	13	14	15	16	17	18	
19	20	21	22	23	24	25	
26	27	28	29	30			

					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

**SUMMER SESSION
SECOND TERM**

JULY

- 7 Registration.
- 8 Classes begin.
- 11 Last day for schedule revisions and/or late registration.
- 13 Fourth class day
- 28 Last day to drop or withdraw without penalty.

AUGUST

- 9 Last day to drop or withdraw.
- 12 Last class day.
Grades for graduating seniors due by 8:30 a.m.
- 13 Commencement.
All grades due by noon.

		1	2	3	4	5	6
7	8	9	10	11	12	13	
14	15	16	17	18	19	20	
21	22	23	24	25	26	27	
28	29	30	31				

Board of Regents

Otho Plummer, Chairman	Beaumont
A.H. Montagne, Vice-Chairman	Orangefield
Bryan D. Beck, Jr., Secretary	Beaumont
Tolbert T. Crowder	Port Arthur
Lloyd L. Hayes	Port Arthur
Ocie R. Jackson	Anahuac
Thomas M. Maes, II	Beaumont
Elvis L. Mason	Dallas
J. C. Zbranek	Liberty
<hr/>	
J. B. Morris, Chairman Emeritus	Beaumont

1975-76 Directory

Officers of Administration

GENERAL

JOHN E. GRAY, LL.D., President
ANDREW J. JOHNSON, Ph.D., Vice-President for Administration
DAVID D. GEDDES, Ph.D., Vice-President for Academic Affairs
W. S. "BUD" LEONARD, B.S., Vice-President for University Relations
OSCAR K. BAXLEY, B.B.A., Comptroller and Chief Fiscal Officer
NORRIS H. KELTON, M.A., Dean of Admissions and Records
F. P. WEAVER, B.B.A., Business Manager
GEORGE E. McLAUGHLIN, B.S., Dean of Student Affairs
ROBERT BLAINE THOMAS, Ph.D., Director of Library Services

COLLEGES

E. B. BLACKBURN, JR., Ed.D., Dean, College of Graduate Studies
W. BROCK BRENTLINGER, Ph.D., Dean, College of Fine and Applied Arts
BETTY JO HADLEY, Ph.D., Dean, College of Health Sciences
ROBERT A. McALLISTER, Ph.D., Dean, College of Engineering
M. L. McLAUGHLIN, Ed.D., Dean, College of Education
JOHN A. RYAN, Ph.D., Dean, College of Business
KENNETH E. SHIPPER, Ph.D., Dean, College of Technical Arts
PRESTON B. WILLIAMS, Ph.D., Dean, College of Liberal Arts
ROGER E. YERICK, Ph.D., Dean, College of Sciences

CENTER DIRECTORS

W. SAM MONROE, B.B.A., Director, Lamar University at Port Arthur
JOE BEN WELCH, Ed.D., Director, Lamar University at Orange

COLLEGE OF TECHNICAL ARTS

KENNETH E. SHIPPER, Ph.D., Dean
NORMAN E. LOWREY, Supervisor, Adult Training Programs
JOSEPH D. REHO, M.Ed., Director of Adult and Continuing Education
HARRY L. WILLIAMS, M.Ed., Vocational Counselor
MRS. WILLA V. NEWTON, Senior Secretary
NEVA A. GARRETT, Secretary

1975-76 Faculty

- DOYLE R. BICE, Instructor II of Diesel Mechanics, 1975
A.A.S., Lamar University
- EUGENE G. BROUSSARD, Instructor I of Industrial Electricity and Electronics Technology, 1969, 1970
B.S., Lamar University
- MRS. ALICE W. CATER, Instructor II of Real Estate, 1974
B.B.A., Southern Methodist University
M.B.A., The University of Texas
- TOM M. CHRISTIAN, Instructor II of Drafting Technology, 1970
B.S., Georgia Institute of Technology
Registered Professional Engineer
- LYNNWOOD M. CLARK, Instructor I of Business Data Processing, 1972
B.S., Lamar University
- ROY W. CLARK, Instructor I of Business Data Processing, 1975
B.A., Oklahoma State University
- TARLTON J. DAIGLE, Instructor III of Industrial Electricity and Electronics Technology, 1951, 1971
B.S., University of Southwestern Louisiana
- MRS. IRIS S. DRODDY, Instructor II of Drafting Technology, 1970, 1974
- DAN W. FRENCH, Instructor I of Mid-Management, 1975
B.A., Lamar University
- MARCIA L. GREEN, Instructor I of Related Arts, 1972
B.A., Bishop College
M.A., Stephen F. Austin State University
- DONALD R. GRUBBS, Instructor I of Welding, 1974, 1975
B.S., Lamar University
- WILLIAM H. HARTFORD, Instructor III of Job Relations, 1947, 1971
- MARVIN H. HOGAN, Instructor II of Industrial Electricity and Electronics Technology, 1970, 1974
- JOSEPH C. JAMES, Instructor I of Drafting Technology, 1974
- BEN M. JARRELL, Instructor I of Refrigeration and Air Conditioning Technology, 1973
- JOE I. JUAREZ, Instructor II of Basic Communications, Head, Related Arts Department 1968, 1974
B.F.A., University of Houston
B.S., Lamar University
M.Ed., University of Texas
- OTTO A. KRIEGEL, Instructor I of Machine Tools, 1973
- NICHOLAS V. LAMPSON, Instructor II of Related Arts, 1971
B.S., M.Ed., Lamar University
- ROBERT J. LAWRENCE, Instructor III of Industrial Electricity and Electronics Technology, Head, Technical Department, 1958, 1971
- NORMAN E. LOWREY, Supervisor, Adult Training Programs, 1967, 1970

12 FACULTY

- SAM LUCIA, Instructor IV of Diesel Mechanics, 1954, 1970
Regents' Instructor
- RONALD I. MARBLE, Instructor II of Welding, 1967, 1973
C.C., Lamar University
- RALPH K. MOCK, Instructor III of Drafting Technology, 1966, 1971
- JERRY B. MOSELEY, Instructor I of Basic Communications, 1970
B.S., M.Ed., Lamar University
- MYRON M. MYRICK, Instructor II of Drafting Technology, 1967, 1971
Certified Engineering Technician
- *JAMES R. RIPLEY, Instructor I of Welding, 1975
- M. PAUL ROY, Instructor IV of Machine Tools, Head, Industrial Department, 1973,
1974
- KENNETH E. SHIPPER, Dean, College of Technical Arts, 1971
B.S., Sam Houston State University
M.A., Ph.D., The University of Texas
- LENOX L. SIGLER, Instructor II of Industrial Electricity and Electronics Tech-
nology, 1965, 1970
A.A., Lamar University
- JAMES H. SMITH, Instructor II of Diesel Mechanics, 1968, 1973
A.A.S., Lamar University
- MAX K. SNIFFEN, Instructor II of Mid-Management, 1972
B.S., B.A., Ohio State University
M.B.A., Lamar University
- JAMES D. SPENCER, Coordinator of Continuing Education, 1970
B.S., M.Ed., Texas A&M University
- DEANNA K. STAHL, Instructor II of Technical Mathematics, 1972
B.A., M.S., Lamar University
- *HYMAN K. TAYLOR, Instructor I of Drafting Technology, 1973
B.S., Lamar University
- BRIAN K. TANNER, Instructor I of Machine Tools, 1975
C.C., Lamar University
- ELLIS THOMPSON, Instructor III of Refrigeration and Air Conditioning Tech-
nology, 1956, 1971
- CAREY B. WESLEY, Instructor II of Welding, 1966, 1970
A.A.S., Lamar University
- HARRY L. WILLIAMS, Vocational Counselor, 1968, 1972
B.B.A., Stephen F. Austin State University
M.Ed., Lamar University
- JERRY L. WILSON, Instructor II of Industrial Electricity and Electronics Tech-
nology, 1970
B.S., M.Ed., Lamar University

*LU Orange faculty

Part-Time Faculty

- FRANK A. ADAMS, Adjunct Instructor of Real Estate, 1975
B.A., Vanderbilt University
J.D., The University of Texas
- FRANK M. ADAMS, Adjunct Instructor of Real Estate, 1975
B.A., Westminster College
J.D., University of Missouri
- LEO G. BABEL, Adjunct Instructor of Plant Maintenance and Operations, 1974
- FRANCIS L. BARGA, Adjunct Instructor of Industrial Supervision, 1971
- L. DON BATTLE, Adjunct Instructor of Drafting Technology, 1972
- CLEMENT C. BERRYMAN, Adjunct Instructor of Plant Maintenance and Operations, 1974
B.S., The University of Texas
- HERMAN W. BLANTON, Adjunct Instructor of Real Estate, 1965
- LAWRENCE BONURA, Adjunct Instructor of Industrial Supervision, 1975
B.S., M.E., Lamar University
- WILLIFORD BOUDREAUX, Adjunct Instructor of Welding, 1974
- PRICE BRADSHAW, Adjunct Instructor of Plant Maintenance and Operations, 1974
B.S., Texas A&M University
- CLETUS BREHME, Adjunct Instructor of Plant Maintenance and Operations, 1975
B.S., M.S., University of Louisville
- BARBARA BURRIS, Adjunct Instructor of Related Arts, 1971
B.A., Lamar University
- ROGER G. CORLEY, Adjunct Instructor of Industrial Supervision, 1975
- OTTIS CRENSHAW, Adjunct Instructor of Industrial Electricity and Electronics Technology, 1972
- JOHN C. DANNA, Adjunct Instructor of Drafting Technology, 1971
- ARMAND DAVIS, Adjunct Instructor of Plant Maintenance and Operations; 1974
B.S., Lamar University
- LAIRON W. DOWDEN, Adjunct Instructor of Refrigeration and Air Conditioning Technology, 1974
- STEPHEN M. FITZGERALD, Adjunct Instructor of Related Arts, 1974
B.S., M.S., Lamar University
- ERRETT D. GIPSON, JR., Adjunct Instructor of Drafting Technology, 1975
A.A.S., Lamar University
- RALPH L. GLENN, Adjunct Instructor of Plant Maintenance and Operations, 1975
- ROBERT A. GREEN, Adjunct Instructor of Plant Maintenance and Operations, 1975
B.S., M.S., Lamar University
- JESSE L. HARBIN, Adjunct Instructor of Related Arts, 1974
B.S., Lamar University
- ELMER HARGROVE, Adjunct Instructor of Plant Maintenance and Operations, 1975
- HOWARD GLENN HOLLINGSHEAD, Adjunct Instructor of Refrigeration and Air Conditioning Technology, 1974
B.S., Lamar University

14 FACULTY

- DON B. KAYE, Adjunct Instructor of Industrial Supervision, 1975
B.S., Sam Houston State University
- BOBBY G. MARSHALL, Adjunct Instructor of Diesel Mechanics, 1971
- CALVIN J. McKAY, Adjunct Instructor of Industrial Supervision, 1966
B.S., University of Southwestern Louisiana
- DAVID S. MONK, Adjunct Instructor of Drafting Technology, 1975
- WILLIAM J. MONTANA, Adjunct Instructor of Refrigeration and Air Conditioning
Technology, 1975
- FLETCHER A. NORWOOD, Adjunct Instructor of Drafting Technology, 1975
- BILLY PATTERSON, Adjunct Instructor of Plant Maintenance and Operations, 1975
- WESLEY C. PAULUS, Adjunct Instructor of Related Arts, 1975
B.S., Lamar University
- RONALD W. PEEVY, Adjunct Instructor of Related Arts, 1975
B.S., M.E.S., Lamar University
- WILLIAM C. PETERS, Adjunct Instructor of Business Data Processing, 1967
B.A., University of Louisville
- CHARLES PROTHRO, Adjunct Instructor of Plant Maintenance and Operations,
1975
- RAYMOND D. ROBERTSON, Adjunct Instructor of Plant Maintenance and Opera-
tions, 1974
B.A., University of Houston
- VERNON K. TANDBERG, Adjunct Instructor of Fire Protection Technology, 1975
- WILLIAM E. TANNERT, Adjunct Instructor of Related Arts, 1974
B.S., Stephen F. Austin State University
- LESLIE G. WALLEY, Adjunct Instructor of Industrial Electricity and Electronics
Technology, 1970
- WILBUR O. WEBSTER, Adjunct Instructor of Related Arts, 1972
B.S., University of Southwestern Louisiana
- THOMAS R. WHIDDON, JR., Adjunct Instructor of Industrial Supervision, 1973
B.B.A., The University of Texas
- MRS. ANITA J. WOODS, Adjunct Instructor of Related Arts, 1971
B.A., Sam Houston State University

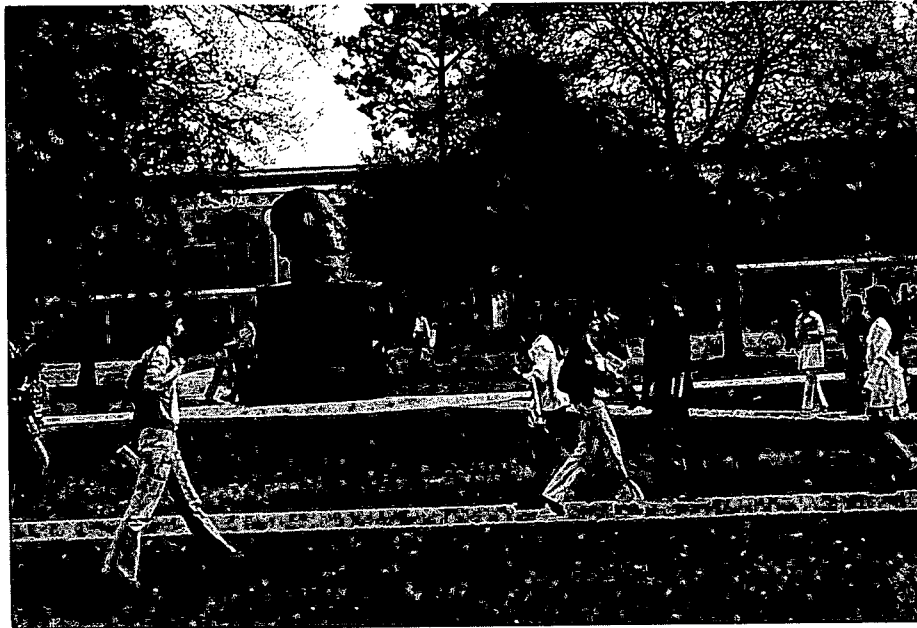
Lamar University at Port Arthur

- MRS. GLENDA O. BARRON, Instructor I of Office Occupations, 1975
B.S., University of Houston
- MRS. LETICIA A. BROUSSARD, Adjunct Instructor of Office Occupations, 1975
- MRS. JEAN CARUTHERS, Instructor I of Cosmetology, 1975
- MRS. O. JEAN COLE, Instructor I of Office Occupations, 1975
B.B.A., Lamar University
- HUGH J. FORREST, Instructor I of Automotive Mechanics, 1975

W. SAM MONROE, Director of Lamar University at Port Arthur, 1975
B.B.A., Sam Houston State University
MRS. IDA ROSS, Instructor I of Office Occupations, 1975
B.B.A., Lamar University
FRANKLIN C. SAVAGE, Instructor I of Automotive Mechanics, Head, Department
of Mechanical Arts, 1975
OSCAR C. SMITH, Instructor I of Industrial Electricity and Electronics Technology,
1975
LEE RAY TRAHAN, Instructor I of Welding, 1975
EUGENE P. WRANITZKY, Instructor of Welding, 1975

Part-Time

MRS. INELL R. MOORE, Adjunct Instructor of Office Occupations, 1975
B.S., M.Ed., Texas Southern University
MRS. BEVERLY S. PARKER, Adjunct Instructor of Office Occupations, 1975
B.A., Southwestern University
PATRICIA WHELESS, Instructor I of Office Occupations, 1975
B.F.A., University of Oklahoma
MRS. VIRGINIA M. WHIGHAM, Adjunct Instructor of Office Occupations, 1975





College of Technical Arts

The College of Technical Arts, one of nine colleges at Lamar University, provides technical and industrial education for thousands of men and women from Texas, other states, and many foreign countries. It is housed in a modern plant consisting of five buildings containing 80,000 feet of classroom, shop and office space. Convenient parking for 400 cars is provided adjacent to these buildings. Entrance to this area is located in the 4400 block of Spur 380 (Beaumont - Port Arthur Highway). The College of Technical Arts also offers courses and programs on campuses located in Orange and Port Arthur. Off-campus courses also are offered in several cities in the area.

An Associate of Applied Science degree is awarded in the following fields of study: automotive mechanics; business data processing; drafting technology; diesel mechanics; fire protection technology; electronics technology; general secretary; industrial electricity and electronics technology; legal secretary; medical secretary; mid-management; machine tools; refrigeration and air conditioning technology; real estate; and welding.

A student may earn a diploma upon satisfactory completion of one of the following programs: accounting clerk; automotive mechanics; clerical; cosmetology; electronics; marine construction; and office occupations.

The real estate, industrial supervision, plant maintenance and operations, and welding programs have provisions for offering a Certificate of Completion when the specified course requirements have been satisfied.

General Information

LOCATION

Lamar University, a state-supported institution, is located in Beaumont, the center of industrial Southeast Texas. The campus is adjacent to the Port Arthur Highway (Spur 380) in southeastern Beaumont.

The city features modern schools, churches and shopping districts to serve the industrial community of approximately 120,000 persons. Principal industries in the area are oil refining, shipping, shipbuilding, rubber manufacturing and chemical production. Surrounding the urban communities are ranches and rice farms.

Within the metropolitan area are the cities of Port Arthur, Orange, Vidor, Port Neches, Nederland and Groves. All lie within 25 miles of Beaumont and form the heart of the upper Gulf Coast area with a population of more than 350,000.

HISTORY

South Park Junior College was established in 1923 and was controlled by the South Park Independent School District. Classes were conducted in the South Park High School building. An initial enrollment of about 125 students in 1923 had increased to 300 by 1931.

In 1932, the name of the institution was changed to Lamar College. At this time, separate facilities were provided, additional equipment was purchased and new policies instituted. By 1939, enrollment was approximately 640.

Lamar Union Junior College District was created in 1940, and Lamar College was separated from the South Park Independent School District. Bonds were approved and new facilities were constructed on the site of the present main campus.

A movement to expand Lamar College into a four-year state-supported school culminated in the creation of Lamar State College of Technology on September 1, 1951. Since that time, enrollment has increased to more than 12,700 students, and the curriculum has been expanded to include many areas of study. Graduate work in specified fields began in the academic year of 1960-61, and extension work became an integral part of the educational program in 1964. A doctoral program in engineering was added in 1971. Lamar University at Orange, offering first and second year courses, opened in 1969. Lamar University at Port Arthur, also offering first and second year courses, began operation in the fall of 1975, and expanded the occupational programs available to students. An additional 13 acres located off Highway 90 in west Beaumont has facilities where various vocational-technical programs are offered. The University also owns 36 acres on Pleasure Island in Port Arthur.

The institution's status as a university became official on August 23, 1971, when the name was changed to Lamar University.

Vocational subjects were among the first courses offered by Lamar and have played an important role in the development of Lamar University. A Division of Vocations was established in 1946 and became the Lamar School of Vocations in 1955. In 1970, the name was changed to the School of Technical Arts and in 1972, it became the College of Technical Arts. During 1971, the College began awarding Associate of Applied Science degrees in certain two-year programs. The College offers the Certificate of Completion in programs of one year or less in duration.

GOVERNMENT

A board of nine regents, appointed by the Governor and approved by the State Senate for terms of six years, governs the University. The Board of Regents delegates the direction of university affairs to the president, administrative officers and faculty.

18 GENERAL INFORMATION

ACCREDITATION

Lamar University is accredited by the Association of Texas Colleges and Universities, the Southern Association of Colleges and Schools, and is approved by the Texas Education Agency.

Several departments have been accredited by professional agencies. In the College of Engineering, the departments of Chemical, Civil, Electrical, Industrial and Mechanical Engineering are accredited by the Engineers' Council for Professional Development. Other accreditations include the Department of Chemistry by the American Chemical Society; Department of Music by the National Association of Schools of Music; and the Departments of Elementary and Secondary Education by the National Council for the Accreditation of Teacher Education.

The University also is a member of a number of academic councils, societies, associations and other such organizations.

OBJECTIVES

The basic objective of the College of Technical Arts is to help students equip themselves for effective living and for responsible citizenship in our society by offering educational programs and training which will extend their basic knowledge, encourage their continued development, and give them marketable skills. In working toward this goal, the College encourages students to assume a major share of the responsibility for the development of their potentialities and for utilization of their abilities, for their own purposes and for the good of society.

In order to stimulate students to have open minds, emphasis is placed upon the development of creative and scientific thinking for the solution of problems in the social and physical environment of their time. An effort is also made to provide guidance which will encourage the students to reach mature and responsible decisions, whatever the nature of the problems they may encounter.

The College of Technical Arts recognizes its obligation to make available to the community all the opportunities implicit in its function as a part of Lamar University. In an effort to achieve this goal, the specific objectives of the college are:

1. To provide guidance services that will assist each student in making an appropriate vocational choice.
2. To provide certificate, diploma and degree programs designed to prepare students for employment in various fields.
3. To provide education and training which allows the graduate to advance rapidly in his chosen field.
4. To instill in the student the desire to learn which will guide his growth in his profession.
5. To provide in-service training to persons currently employed in Southeast Texas.

ENTERING DATES

Courses and schedules have been arranged so that students may enter Lamar four times each year. The current University Calendar contains information regarding registration periods and exact entering dates.

EXTENDED DAY CLASSES

For administrative purposes, classes offered after 5 p.m. are referred to as Extended Day Classes. With few exceptions, both day and Extended Day classes are taught by the regular faculty and educational facilities are the same. A person employed during the hours of regular classes may attend classes in the evening and work to obtain a degree or to expand his knowledge in a special field of interest.

Courses offered in the evening make possible continual progress toward a degree objective. The program of study outlined in the catalog should be followed and should be approved by the department head concerned with the training objective of the student.

Facilities

BUILDINGS AND GROUNDS

Lamar University's campus contains approximately 200 acres and the physical plant is valued at \$50,000,000. Included among its many buildings are: Administration, Art, Edwin S. Hayes Biology, Bookstore, Business, Chemistry, Dining Hall, Education, Educational Services Center, Lloyd B. Cherry Engineering, Lucas Engineering, Engineering II, Geology, Health Center, Home Economics, Liberal Arts, Mary and John E. Gray Library, McDonald Gymnasium, Music-Speech, O. B. Archer Physics, Post Office, Science Auditorium, Setzer Student Center, Speech and Hearing Center, five College of Technical Arts buildings, University Theatre, G. A. Wimberly, Sr. Student Affairs, and Women's Gymnasium and Pool. The Mamie McFaddin Ward Health Sciences and ROTC Buildings are under construction.

Campus dormitories include Brooks Hall, Gentry Hall and Gray Hall for women; Campbell Hall, Combs Hall, Morris Hall, Plummer Hall and Shivers Hall for men. Three apartment buildings for upperclassmen and married couples are included in the residence hall system. Campbell, Combs, Gray, Morris and the apartments have undergone extensive remodeling.

Also located on the campus are a football stadium seating 17,150, Cardinal baseball field, athletic practice fields, Olympic-size swimming pool, indoor swimming pool, 14 tennis courts, handball courts, track and field stadium, a four-building maintenance complex, Home Management House, Nursery School, and homes for the president and director of the physical plant.

THE LIBRARY

The new eight-story Mary and John E. Gray Library has a strong collection of over 350,000 volumes in support of continuously expanding academic programs. Approximately 20,000 volumes are added to the collection annually. The library subscribes to over 3,000 periodicals, and as a selective document depository, it has over 50,000 state and federal documents and microforms. Texas academic libraries are linked by teletype for faculty, graduate student and advanced student research.

HEALTH CENTER

The University maintains a Health Center for the use of students. Two types of service are available: (1) out-patient service for those who have minor ailments but who do not require constant supervision, and (2) infirmary service for those who are in need of the continued attention of the University physician or of nursing care.

It is not possible for the University to provide unlimited medical service. Special medicines, examinations, treatments, X-rays and laboratory tests are not furnished. No charge is made, however, for up to 10 days care each semester in the Health Center.

Beginning with the 1975 Fall Semester, all students will pay a Health Service Fee of \$1 per semester hour with a maximum of \$10 for each of the Fall and Spring Semesters, and a maximum of \$5 for each of the Summer Sessions. This fee will be used only for health services. Added benefits for the student are: (1) vaccines, serums and gamma globulin will be given in the Health Center free of charge. Pre-admission vaccinations are not included; (2) all drugs prescribed and dispensed in the Health Center are free

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of charge, and (3) the first \$100 of costs for emergency care of accidental injuries sustained on the campus and treated in a local hospital or doctor's office will be paid from Student Health fees.

The Health Center, located on East Virginia St. near Combs Hall, is adequately staffed and equipped for treating most illnesses and injuries. The Center does not provide care for students requiring surgery or the services of specialists. In these cases, every effort will be made by the physician or nurse to notify the parents or guardian of the student's needs.

The University assumes no responsibility for continued medical care for students having chronic diseases. These students should arrange for the care of a private physician located in or near Beaumont. When the University is not in session, the Student Health Center is not responsible for a student's health care.

The University is not under obligation to provide hospital services elsewhere if the Health Center is filled to capacity. The Health Center, however, has a sufficient number of beds for all normal needs.

Students who are ill should report promptly to the Center for medical care.

COUNSELING CENTER

Lamar University maintains a Counseling Center to serve students encountering educational, social or personal difficulties. The center is staffed with fully-trained and qualified counselors to assist in the resolution of student problems and questions.

While the Counseling Center does not address problems of a long-term therapeutic nature, students encountering difficulties are encouraged to consult the center on a no-charge basis. In addition to counseling and testing procedures, the center maintains a library to assist students in making decisions concerning choices of majors and careers.

The Counseling Center is in the Wimberly Student Affairs Building and observes the office hours of the University. A counselor is assigned duty one evening per week for the benefit of students who are attending extended day classes.

BOOKSTORE

The University operates a bookstore, for the convenience of faculty and students, where supplies and books, new and used, may be purchased.

Used books, which are currently approved, may be sold to the bookstore. Books which must be discontinued are not purchased by the Bookstore except at a salvage price. The Bookstore reserves the right to require the seller to prove ownership of books.

DINING HALLS

Dining halls are located on the main campus (see map on page 4) and in Brooks-Shivers Hall. The food service is operated by ARA-Slater, a national catering firm.

Provision is made for special diets and work or class schedules which conflict with serving hours. A schedule of serving hours may be obtained from the Housing Office.

Two snack bars, located in the Setzer Student Center, provide sandwiches, soft drinks and light lunches. Commuter students also may use the snack bars and the main dining hall.

In addition to the snack bars located in the Setzer Student Center, the College of Technical Arts provides facilities where sandwiches, soft drinks and light lunches are available.

COMPUTER CENTER

The University operates a Computer Center as a service to faculty, administration, students, researchers and others. The computer center has modern, high-speed digital and analog equipment valued in excess of \$750,000. It is anticipated that new equipment will be purchased and put into operation within a year.

SCHOLARSHIPS

Lamar University offers a scholarship to the highest ranking graduate of each fully accredited high school of Texas. Details are available from the Financial Aid Office. Other scholarships supported by industries, organizations and individuals are available upon application for Technical Arts students. Further information may be obtained from the Student Financial Aid Office or the Vocational Counselor.

STUDENTS WITH PHYSICAL HANDICAPS

The Texas Rehabilitation Commission offers assistance for tuition and nonrefundable fees to students who have certain disabling conditions, provided their vocational objectives have been approved by a TRC Counselor. Examples of such conditions are orthopedic deformities, emotional disorders, diabetes, epilepsy, heart conditions, etc. Other services also are available to assist the handicapped student to become employable. Application for such service should be made at the Texas Rehabilitation Commission, Beaumont District Office, 1110 Goodhue Building, Beaumont, Texas 77701.

VETERANS' EDUCATION

Lamar holds a contract for educating veterans under the Vocational Rehabilitation Law, known as Public Law Number 16, and is an approved university for veterans under Public Law Number 346 and Public Law Number 550. The vocational training has been especially prepared for those who wish to establish themselves in business and industry in the Sabine-Neches area.

Veterans who are interested in continuing their education under federal laws providing such training are directed to secure approval from the Office of Veterans' Affairs, Student Affairs Building.

Advice on program and training opportunities, academic assistance and counseling is available from this office or by writing to Box 10017, LU Station.

PART-TIME EMPLOYMENT

The University, as well as many local businesses and industries, provides a number of part-time jobs which enable worthy students to earn part or all of their expenses. Applicants should contact the Director of Financial Aid.

CAMPUS POST OFFICE

The campus Post Office, a contract facility operated by the University, is officially designated as Lamar University Station 77710. Full postal services are offered.

Each student may make application for a box at the Post Office by completing necessary forms. The charge is \$4.50 per semester and \$2.25 per Summer Session. Three students are allowed to share the same box.

Mail may be picked up at the general delivery window by those students who do not choose to reserve boxes at the Post Office.

TESTING AND PLACEMENT CENTER

The Testing and Placement Center is located in the Educational Services Center and is open 8 a.m. to 5 p.m. Monday through Friday.

This Center provides testing service for entering students and for others. Non-students desiring this service pay a fee dependent upon the program used.

Placement service also is provided at this Center and is available to all students, faculty and former students.

OFFICE OF CONTINUING EDUCATION

The Office of Continuing Education conducts on-campus and off-campus instructional programs, for credit and noncredit, with emphasis on adult education. The Office of Continuing Education presents a broad spectrum of vocational and academic courses. A special fee may be required for off-campus courses.

FINANCIAL AID AND AWARDS

Financial assistance in the form of scholarships, grants, loans and employment is available to a number of qualified students. Complete information about financial aid is published annually in the bulletin of Financial Aid and Awards. Copies are available from the Office of Public Information or the Office of Student Financial Aid. The Financial Aid office is located in the Student Affairs Building. Students also are encouraged to contact the Vocational Counselor about special awards which are restricted to full-time Technical Arts students.



Admission Requirements

Applicants seeking admission to the College of Technical Arts must satisfy the admission requirements of the program of study which they desire to enter. The applicant should be aware that there are different admission requirements for degree, diploma and certificate programs. Requests for application forms or admission information may be directed to the Office of Admissions and Records, Lamar University, Lamar University Station, Box 10009, Beaumont, Texas 77710.

ADMISSION REQUIREMENTS FOR DEGREE PROGRAMS

Students who desire to enter programs in the College of Technical Arts must satisfy the following admission requirements:

1. File an application for admission. (Form attached to back of this catalog.)
2. Submit the official health data form executed by a physician (health form attached to back of this catalog).
3. Have transcript of high school grades sent directly to the Dean of Admissions and Records, Lamar University. Students transferring from another institution must submit official transcripts from each college previously attended. This requirement applies regardless of the length of time in attendance and regardless of whether credit was earned or is desired. Further information concerning transfer students may be found in the "Admissions" section of the general university bulletin.
4. One of these prerequisites must be met:
 - a. Graduation from an accredited high school, or
 - b. Transfer with transcript from an accredited college or university.
 - c. Individual approval from the Dean of Admissions and Records for persons 19 years of age or older whose high school class has been graduated for at least one year, and who do not meet either of the two preceding requirements. Students wishing to enter under this prerequisite should first contact the Dean of the College of Technical Arts for admission to the Beaumont campus; the director of the Orange campus, or the director of the Port Arthur campus.

ENTRANCE EXAMINATION

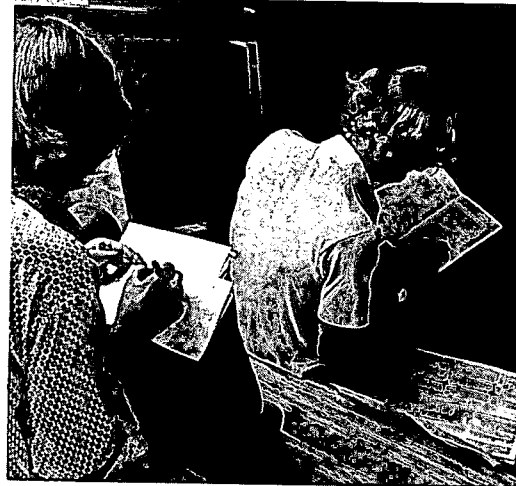
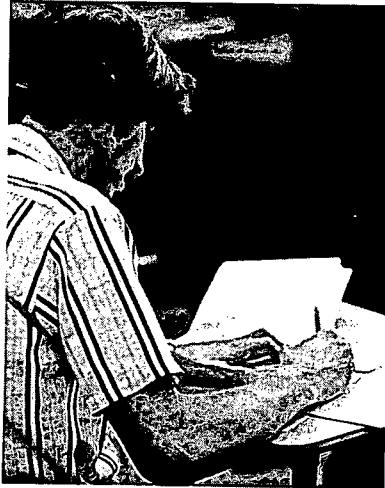
Those students who are required to take an entrance examination may submit either SAT or ACT scores in fulfillment of this requirement. These examinations are required for counseling purposes. Both tests are given several times each year at test centers throughout the United States and in many foreign countries. It is recommended that summer and fall applicants take one of these tests early in the senior year and, if possible, no later than February. Location of test centers, test dates, fees, test application forms, sample question booklets, etc. may be obtained without charge from high school counselors or by writing to the testing agency. SAT inquiries should be directed to the College Entrance Examination Board, Box 1025, Berkeley, California 94704. ACT inquiries should be directed to the American College Testing Program, Box 168, Iowa City, Iowa 52240.

WHERE TO APPLY

All required admission forms should be addressed to the Office of Admissions and Records, Lamar University, Lamar University Station, Box 10009, Beaumont, Texas 77710.

READMISSION

Persons who attended the College of Technical Arts in past years, but who are not enrolled currently, should submit an application and indicate that they have attended Lamar previously. Students who currently are enrolled should follow the procedures for pre-registration as described by their advisors or instructors.



Fees and Expenses

PAYMENT OF FEES

Lamar University reserves the right to change fees in keeping with acts of the Texas Legislature and the University's Board of Regents.

A student is not registered until all fees are paid in full. Payment may be made by check, money order or currency. Checks and money orders, not in excess of total fees, should be made payable to Lamar University and will be accepted subject to final payment. Checks and drafts deposited with Federal Reserve banks cannot be handled through regular bank collection channels if received without the magnetic ink (MICR) transit number. The University will not accept counter checks or "changed" checks.

SUMMARY OF REGISTRATION EXPENSES

Each student must plan his budget carefully. It is possible to attend Lamar on a modest sum and yet participate in most phases of the university program. To assist in planning registration expenses, the following estimate is furnished as a guide:

Texas residents taking a 15 hour academic work load*:

Tuition	\$60
Student Services Fee	30
General Use Fee	60
Setzer Student Center Fee	10
Student Health Fee	10
Parking Fee (if desired)	10
Health Insurance (if desired)	36
Books and Incidentals (estimated)	65
	\$281
	+ lab fees

Part-time Student (Six semester hours):

Tuition	\$50
Student Services Fee	15
General Use Fee	24
Setzer Student Center Fee	10
Student Health Fee	5
Parking Fee (if desired)	10
Books and Incidentals (estimated)	25
	\$139
	+ lab fees

Tuition and general use fees vary with the semester hours carried so that the total may differ from this estimate.

TUITION AND FEES

Tuition is based upon the number of hours for which the student registers, and is determined by the student's classification as a Texas resident; a nonresident U.S. citizen; or nonresident who is a citizen of another country.*

Each student pays a Student Services Fee of \$2.50 per semester hour, with a maximum of \$30 in a long session.

*Tuition for Texas residents taking 12 hours or less is \$50 per semester. Each additional semester hour is \$4 per hour. A full-time student is one who takes 12 or more semester hours of course work.

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SUMMARY OF FEES

Additional fees and charges which are applied on a selective basis are listed following the Summary of Fees.

Term	No. of Semester Hours	Tuition			Student Services Fee	General Use Fee	Setzer Center Fee	Health Center Fee	Total Charge		
		A	B	C					A	B	C
Each	1	\$50	\$ 40	\$200	\$ 2.50	\$15	\$10	\$ 1	\$ 78.50	\$ 68.50	\$228.50
Fall	2	50	80	200	5.00	15	10	2	82.00	112.00	232.00
or	3	50	120	200	7.50	15	10	3	85.50	155.50	235.50
Spring	4	50	160	200	10.00	16	10	4	90.00	200.00	240.00
Semester	5	50	200	200	12.50	20	10	5	97.50	247.50	247.50
	6	50	240	200	15.00	24	10	6	105.00	295.00	255.00
	7	50	280	200	17.50	28	10	7	112.50	342.50	262.50
	8	50	320	200	20.00	32	10	8	120.00	390.00	270.00
	9	50	360	200	22.50	36	10	9	127.50	437.50	277.50
	10	50	400	200	25.00	40	10	10	135.00	485.00	285.00
	11	50	440	200	27.50	44	10	10	141.50	531.50	291.50
	12	50	480	200	30.00	48	10	10	148.00	578.00	298.00
	13	52	520	200	30.00	52	10	10	154.00	622.00	302.00
	14	56	560	200	30.00	56	10	10	162.00	666.00	306.00
	15	60	600	210	30.00	60	10	10	170.00	710.00	320.00
	16	64	640	224	30.00	64	10	10	178.00	754.00	338.00
	17	68	680	238	30.00	68	10	10	186.00	798.00	356.00
	18	72	720	252	30.00	72	10	10	194.00	842.00	374.00
	19	76	760	266	30.00	76	10	10	202.00	886.00	392.00
	20	80	800	280	30.00	80	10	10	210.00	930.00	410.00
Each	1	25	40	100	2.50	15	5	1	48.50	63.50	123.50
Six-	2	25	80	100	5.00	15	5	2	52.00	107.00	127.00
Week	3	25	120	100	7.50	15	5	3	55.50	150.50	130.50
Summer	4	25	160	100	10.00	16	5	4	60.00	195.00	135.00
Session	5	25	200	100	12.50	20	5	5	67.50	242.50	142.50
	6	25	240	100	15.00	24	5	5	74.00	289.00	149.00
	7	28	280	100	15.00	28	5	5	81.00	333.00	153.00
	8	32	320	112	15.00	32	5	5	89.00	377.00	169.00
	9	36	360	126	15.00	36	5	5	97.00	421.00	187.00
	10	40	400	140	15.00	40	5	5	105.00	465.00	205.00

Code: A. Texas residents; B. nonresidents; C. nonresidents who are citizens of another country and who were enrolled prior to June 16, 1975.

Laboratory Fees

A laboratory fee of \$2 is charged each semester for courses with a combined lecture and laboratory credit of from one to three semester hours. The laboratory fee is \$4 per semester for courses of four or more semester hours credit.

Private Lessons in Voice and Instrumental Music

One half-hour lesson per week\$18
 Two half-hour lessons per week 36

Parking Fee

Charges for parking on campus are made at registration. Automobile registration fees are as follows: Fall Semester, \$10; Spring Semester, \$6; Summer Session I, \$4; Summer Session II, \$2. Only one registration is required during an academic year, and a student's parking fee is honored until the end of Summer Session II.

Health and Accident Insurance

Health and accident insurance coverage is available at registration for students carrying nine or more semester hours. The fee is estimated at \$36. This or similar insurance is required of all international students.

Special Fees

Fees will be set by the University for courses in which special plans must be prepared and specialists secured as instructors.

Exemption 1—Scholarships to High School Honor Graduates

The highest ranking student in the graduating class of a fully accredited Texas high school will be entitled to a scholarship valued at \$100. This scholarship must be used during the long session immediately following graduation. Details may be obtained from the Student Financial Aid Office.

Exemption 2—Veterans

Lamar is approved under all of the Veterans Educational Assistance programs for educational training of veterans of the U.S. Armed Forces.

Persons who were citizens of Texas at the time of entry into the Armed Forces, and who are no longer eligible for educational benefits provided for veterans of the United States, are exempt from tuition and laboratory fees. This applies to those who served in World War I, World War II, the Korean Conflict or the Vietnam War and were honorably discharged. To obtain this exemption, necessary papers must be presented prior to registration and approval obtained from the Office of Veterans' Affairs. The above exemption also extends to wives, children and dependents of members of the Armed Forces who were killed in action or died while in the service in World War II, the Korean Conflict or Vietnam War.

Students who expect to attend Lamar under some veteran's benefit plan should contact the Office of Veterans' Affairs 60 to 90 days prior to registration. The Office of Veterans' Affairs advises veterans on program and training opportunities, academic assistance and counseling. Veterans interested in further information should visit this office in the Wimberly Student Affairs Building.

Refund of Fees

Any student officially withdrawing will receive a refund on tuition, Setzer Center, student service, laboratory, building and general use and private lesson fees according to the following schedule:

Long Session

1. During the first two weeks of the semester, 80 per cent.
2. During the third week of the semester, 60 per cent.
3. During the fourth week of the semester, 40 per cent.
4. During the fifth week of the semester, 20 per cent.

Summer Session

1. During the first week of the semester, 60 per cent.
2. After the first week no refund.

No refunds are made when dropping courses.

Application for a refund must be made to the Comptroller after the student has officially withdrawn, but not later than the end of the current semester or Summer Session. It takes about 30 days to process these refunds.

Returned Check Fees

A student is automatically suspended from the University if a check is returned unpaid. The student may re-enter upon redemption of the check plus payment of the returned check fee of \$2.

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Miscellaneous Fees

Associate Diploma/Degree	\$7.50
Certificate of Completion	7.50
Bachelor's Diploma	7.50
Bachelor's Cap and Gown Rental	7.00
Late Registration	5.00
Returned Checks	2.00
Re-entry Fee	5.00
Transcript Fee50
Advanced Standing Examination (per course)	5.00
Photo Identification	2.00
Swimming Pools (suits and towels)	10.00

Fine and Breakage Loss

Library fines, charges for breakage or loss of equipment, or other charges must be paid before a transcript of credit or a permit to re-enter the University will be issued.

The University reserves the right to make a special assessment against any student guilty of inexcusable breakage, loss of instructional equipment or other university property.

STUDENT RESPONSIBILITY FOR RESIDENCE CLASSIFICATION

The responsibility of registering under the proper residence classification is that of the student. If there is any possible question of his right of classification as a resident of Texas, it is his obligation, prior to or at the time of his registration, to raise the question with the Dean of Admissions and Records and have his status officially determined.

Every student who is classified as a resident student who becomes a nonresident at any time by virtue of a change of legal residence by his own action or by the person controlling his domicile, is required to notify the Dean of Admissions and Records.

Students failing to comply with the residence provisions of the state tuition bill (Art. 2645c, V.C.S. as amended 1957) are subject to penalties as set forth in the law and/or appropriate disciplinary action.

RULES AND REGULATIONS FOR DETERMINING RESIDENCE STATUS

See the general catalog for complete information on how residence status is determined, or consult the Coordinating Board, Texas College and University System "Rules and Regulations for Determining Residence Status" as revised, July 16, 1974. The latter publication is available at the Admissions and Records Office.

Student Housing

The student housing program at Lamar is designed to supplement the academic program by providing opportunities for social and intellectual development and recreation in a pleasant living environment. The University recently completed a multi-million dollar renovation program, making its residence halls among the most modern in Texas. A variety of living styles designed with most of the conveniences of an apartment and all the advantages of campus living include modern furniture, semi-private rooms, carpet, central heating and air conditioning and various color schemes. Residence halls are well staffed to assist with programs and to serve as advisors and counselors to the residents.

Students who do not feel that the residence hall program meets their personal needs may elect to find living accommodations off-campus.

It is recommended that freshmen who do not live with parents or other relatives reside on the campus since the adjustment from high school to college frequently is difficult for the first-year student. In a residence hall, students have access to the new library, to contacts with upperclassmen in their major fields and to professional counseling.

Questions concerning the housing system, its policies, room and board rates, should be directed to the Student Housing Office, Lamar University Station, Box 10041, Beaumont, Texas 77710.

RESERVATIONS AND ASSIGNMENTS

To reserve a room in the residence halls or an apartment, write to the Housing Office at the above address. *A check or money order for \$30 must accompany the reservation request. Reservations may be cancelled with full refund until three weeks prior to the first day of classes. No refunds will be issued on cancellations received after this date.*

All unclaimed rooms will be declared vacant and the deposit forfeited at 6 p.m. on the last day of registration unless the student gives the Student Housing Office written instructions to hold the room for a longer period. Residents will be refunded deposits, less any breakage or cleaning charges, at the end of a semester on proper withdrawal from the housing unit. The deposit will not be refunded if the student moves from the housing system prior to the end of a semester.

Assignments

Permanent assignments cannot be made until the student reports for check-in. The University reserves the right to assign students to specific apartments, residence halls and rooms. Students may request certain apartments, dormitories and rooms, and all possible consideration will be given each request. Students currently living in university-owned housing units have the first choice of rooms and apartments the following semester.

For additional information and application forms, write to the Student Housing Office, Lamar University Station, Box 10041, Beaumont, Texas 77710.

Academic Regulations

COURSE NUMBERING

Each course has an individual alpha-numeric code (such as Dft 131). The alpha part indicates the subject area. Each number contains three or more figures. The first digit indicates the rank of the course: 1 means that it is for freshmen; 2, for sophomores; 3, for juniors; and 4, for seniors. The second figure indicates the number of semester hours credit. The third figure (or figures) indicates the order in which the course is taken.

Semester Hour

The unit of measure for credit purposes is the semester hour which means one hour of recitation (or equivalent in laboratory work) each week for one semester. For each classroom hour, two hours of study are expected. Two or more hours of laboratory work are counted equivalent to one classroom hour. For laboratory work which requires reports to be written outside of class, two clock hours are usually counted as one semester hour. The amount of credit awarded for clinical practice and internships varies and does not follow the two for one ratio.

Admission to Class

The only way to become a member of a class is to register for it through the regular registration procedure.

REGISTRATION

Registration is not complete until all tuition and fees have been paid and all necessary transcripts are on file in the Office of Admissions and Records.

No one may register for credit after the last date for registration as shown on the official calendar. The official calendar is maintained by the Vice-President for Administration.

Auditing of Courses by Senior Citizens

Senior citizens may audit courses without the payment of fees on a space available basis.

CLASS ATTENDANCE AND ABSENCES

Regular and punctual attendance in classes and laboratories is expected of all students. Instructors should maintain attendance records and adhere to attendance policies formulated by their departments.

In general, the individual instructor approves absences. Absences approved because of engagement in a university activity are published in the academic bulletin. An approved absence allows the student to make-up examinations and written assignments without penalty. Although the student must make up the work missed, additional laboratory time is not granted the student.

All instructors should announce these policies concerning unexcused absences at the beginning of each semester.

Students who miss classwork to the extent that their laboratory performance may be unsafe or that they have no reasonable chance to pass the course may be dropped from that course by the department head. The department head should notify the student prior to this action.

Course Load

In May 1974, the Board of Regents established the following definition of course load for the university system. "The maximum credit hours per semester for which a student may enroll at Lamar University is 12 semester credit hours, without special approval. The President of the University is authorized to designate an officer or officers of the University to approve additional semester hours above the established maximum load."

Overloads

The Dean of the College of Technical Arts must approve all overloads. In general, the student must demonstrate that he is capable of maintaining a high performance level in all classes.

CHANGING SCHEDULES

Students may not add, change or drop courses without the permission of their department head. Usually a course may not be added after the first week of the semester (first two days of a Summer Session).

DROPPING COURSES

A student may drop a course without penalty during the first weeks of the semester. The last date for dropping a course without penalty is published in the official University calendar. Students wishing to drop a course should see the head of their department.

A student may not drop a course the last three days prior to the beginning of semester examinations.

For drops after this penalty free period, grades are recorded as Q or F indicating that the student was passing or failing at the time of the drop.

WITHDRAWALS

A student wishing to withdraw for the remainder of the semester or summer term, should fill out a Withdrawal Petition in triplicate in the office of his department head. He must clear all financial obligations and return all uniforms, books, laboratory equipment and other materials to the point of original issue.

Three copies of the withdrawal form signed by the Dean of Technical Arts, the Director of Library Services and the Dean of Student Development, are presented to the Office of Admissions and Records by the student.

The Finance Office, on application before the end of the semester or Summer Session, will return such fees as are returnable according to the schedule shown under the "Fees" section of the bulletin. This refund is made only to persons withdrawing and only if requested before the end of the current semester or Summer Session.

If a withdrawal is made before the end of the tenth week (third week of summer term), or if the student is passing at the time of withdrawal, a grade of W is issued for each course so affected. A grade of F is issued for all courses not being passed at time of withdrawal after this penalty-free period.

A student may not withdraw within three days of the beginning of final exam week.

A student who leaves without an official withdrawal will receive a grade of F in all courses and forfeit all returnable fees.

ENFORCED WITHDRAWAL BECAUSE OF ILLNESS

The Director of the Health Center and the Dean of Student Affairs, on the advice of competent medical personnel, may require withdrawal or deny admission of a student for health reasons (mental or physical).

ACADEMIC PROGRESS

Classification of Students

Students are classified as freshmen, sophomores, juniors, seniors and special. For the purpose of determining eligibility to hold certain offices and for other reasons, officially enrolled students are classified as follows:

Freshman: has met all entrance requirements but has completed fewer than 30 semester hours.

Sophomore: has completed a minimum of 30 semester hours with 60 grade points.

Junior: has completed a minimum of 60 semester hours with 120 grade points.

Senior: has completed a minimum of 90 semester hours with 180 grade points.

Special Student: must meet all entrance requirements.

Full-Time Student: a student taking 12 or more semester hours (four or more in a summer term) is classified as a full-time student.

Grading System

A—Excellent

B—Good

C—Satisfactory

D—Passing

F—Failure

I—Incomplete

W—Withdrawn

Q—Course was dropped

S—Credit

U—Unsatisfactory; no credit

NG—No grade

The grade of W or Q is given if the withdrawal or drop is made before the penalty date or if the student is passing at the time of withdrawal or drop.

The grade of I may be given when any requirement of the course, including the final examination, is not completed. Incomplete work must be finished during the next long semester or the Office of Admissions and Records must change the I grade to the grade of F. The course must then be repeated if credit is desired.

The instructor may record the grade of F for a student who is absent from the final examination and is not passing the course.

Semester grades are filed with the Office of Admissions and Records. A grade may not be recorded for a student not officially enrolled in a course during the semester covered. A grade may not be corrected or changed without the written authorization of the instructor giving the grade. The written instruction for a grade change should be accompanied by a statement explaining the reason for the change.

Grade Points

For the purpose of computing grade averages, grade points are assigned as follows: to the grade of A, 4 points; to B, 3 points; to C, 2 points; to D, 1 point, and F, 0 points.

A grade, once earned and entered upon a student's record, cannot be removed. If a student repeats a course which may not be taken for additional credit, the last grade received is the official grade and is the only one used in figuring GPA or a grade point deficiency. This applies only if the course is repeated at the same institution.

The repetition of a Lamar University course at another institution, in residence or by correspondence, will not remove a "grade" from the GPA computation of Lamar University courses.

It is the responsibility of the student, after repeating a course, to file a special request form in the Office of Admissions and Records so that the adjustment in his GPA can be made.

A student's grade point average is obtained by multiplying the number of semester credit hours of each grade by the grade points assigned to the grade and dividing the sum

of these by the total number of semester hours of all work taken, whether passed or failed except as provided above.

Credit for a course in which the grade of S is given is not included in computation of the grade point average. A student is not given credit for the grades of NG or U nor are the semester hours used in computing the grade point average.

Reports

Reports on grades are mailed at the end of each semester or summer term. Mid-semester reports are made on freshman level courses.

Scholastic Probation and Suspension

Students are expected to make acceptable scholastic progress toward their degree objective. Students who fail to make such progress and accumulate grade point deficiencies are placed on scholastic probation or suspension.

All students with a grade point deficiency at the end of any regular semester shall be placed on scholastic probation and continued on probation as long as a deficiency exists.

All students with a grade point deficiency of 25 or more grade points at the end of a Spring Semester shall be suspended for the following Fall Semester provided that no beginning student shall be suspended at the end of his first regular semester of attendance.

Students suspended by this action may attend the Summer Session on probation. Students with a grade point deficiency below 25 at the close of the Summer Session may register for the following Fall Semester.

A student returning from an academic suspension must continue to reduce his grade point deficiency every semester of enrollment until the deficiency is eliminated. Should he fail to reduce his deficiency in any one semester, he will be suspended.

The first academic suspension shall be for one long semester; the second for two long semesters; and the third for four long semesters and readmission only with special permission of the dean of the academic college.

Students who enter the College of Technical Arts with grade point deficiencies in their university work are advised not to take more than 15 hours in a semester.

Removal of Scholastic Probation and Suspension

1. Students on scholastic probation cannot:
 - a. Represent the University in any extracurricular activity, except where eligibility for participation is governed by conference rules.
 - b. Hold collegiate or university office.
 - c. Participate in trips or tours except when required as class projects.
2. **Warning** — Each student is responsible for knowing his academic status and the regulations which apply. A student who does not abide by the regulations governing his particular status may be required to reduce his academic load or withdraw from the University without special consideration.

ACADEMIC RECORDS AND TRANSCRIPTS

Academic records are in the permanent custody of the Admissions and Records Office. Transcripts of academic records may be secured by an individual personally, or will be released on the student's written authorization. Transcripts are 50 cents per copy.

Copies of transcripts from other institutions, on file in the Office of Admissions and Records for evaluation purposes, will not be released. Copies of these records must be obtained from the issuing college.

Graduation Requirements

ASSOCIATE OF APPLIED SCIENCE

Generally, a student is eligible for graduation when he has completed an approved program of study. Specifically, a student must:

1. Satisfy all admission requirements.
2. Complete an approved degree plan.
3. Have at least a 2.0 grade point average on all work submitted on the degree plan and a 2.0 on all courses in the major field submitted on the degree plan.
4. Complete 24 semester hours of major work at Lamar with 12 hours in 200 level courses.
5. Make final application for graduation and pay all fees by the deadline date as stated in the current catalog.
6. Attend the official graduation exercise or receive prior written permission from the Dean of the College of Technical Arts to be absent.

DIPLOMA

1. Satisfy all admission requirements.
2. Complete an approved diploma plan.
3. Have at least a 2.0 grade point average on all work submitted on the diploma plan and at least a 2.0 on all courses in the major field submitted on the diploma plan.
4. Complete 18 semester hours of major work at Lamar.
5. Make final application for graduation and pay all fees by the deadline date as stated in the current catalog.

CERTIFICATE OF COMPLETION

Generally a student is eligible for graduation when he has completed an approved program of study. Specifically, a student must:

1. Satisfy all admission requirements.
2. Complete an approved certificate plan.
3. Have at least a 2.0 grade point average on all work submitted on the certificate plan.
4. Make application for certification to the person responsible for the program.

General Regulations

NEW COURSES

In order to meet changing educational requirements, the University reserves the right to *add any needed courses at any time without regard to the listing of such courses in the catalog*. It is expected that a listing of these courses will appear in the next catalog issue.

Minimum Class Enrollment

The University reserves the right not to offer any courses listed in this catalog if fewer than 12 students register for the course.

OFFICIAL SUMMONS

An official summons takes precedence over other university activities of the student and should be answered promptly on the day and hour designated. Failure to heed an official summons may subject the student to serious disciplinary action.

DISCIPLINE

Students of Lamar University are expected to conduct themselves in a mature manner, conforming to values and moral standards of good society. They are expected to obey the laws of the land and the regulations of the University. They are further expected to assume full responsibility for the consequences of their actions. Students should be aware of these expectations when they choose to enroll at Lamar University.

Disciplinary procedures, specific rules and regulations, and statements of student rights and responsibilities are published each year in the Student Handbook. Copies of the Conduct Code are available in the Office of Student Development.

Disciplinary Probation

A student may be placed on disciplinary probation for unacceptable behavior at any time or place. The Dean of Student Development may classify behavior as unacceptable and may set the period of probation. The student has the privilege of appealing the decision to the Disciplinary Committee of the University. This appeal is made through the office of the Dean of Student Development.

Hazing

Lamar University is opposed to hazing in all of its various forms and will discipline all offenders in the spirit of the statutes governing this offense, as set forth in Chapter 4-A of Title 15 of *Vernon's Statutes in the State of Texas*.

Penalty for False Statements

A student who makes a false statement to any University official or on an official form submitted to the University is subject to immediate dismissal.

ELIGIBILITY FOR EXTRACURRICULAR ACTIVITIES

An extracurricular activity is understood to be any activity representing the student body, any student organization, any department or division organization or any activity representing the University.

Any full-time student not on disciplinary or scholastic probation who is officially registered is eligible to become a candidate and/or to hold student office or to represent the University in any extracurricular activity provided such student has a grade point average of at least 2.0 for both the whole of his work completed at Lamar and that of the preceding semester.

36 GENERAL REGULATIONS

For the purpose of establishing eligibility, two six-week summer terms may count as one semester.

Transfer students have the same eligibility as freshman students until completion of one semester at Lamar.

PARKING REGULATIONS

Each student who pays the necessary fee is issued a car decal which permits parking on the campus. This decal is numbered and is to be displayed as instructed in official parking and traffic regulations, which are issued when automobiles are registered. Strict observance of traffic and parking regulations is necessary for the safe, orderly flow of vehicles in the campus area.

CHANGE OF ADDRESS OR NAME

Students are responsible for all communications addressed to them at the address on file in the Student Affairs Office and in the Office of Admissions and Records. Any student who moves during a semester must immediately register his change of address in the office of the Dean of Student Affairs and in the office of Admissions and Records. Change of address forms are available in the Office of Admissions and Records.

Change of name due to marriage, or correction of name because of spelling errors may be made by completing a name change card at the Admissions and Records Office. All name changes must be accompanied by a copy of the legal document making the name change official. This document will be kept on file in the student's confidential folder.

STUDENT DEBTS

The University is not responsible for debts contracted by individual students or student organizations and will not act as a collection agency for organizations, firms or individuals to whom students may owe bills.

Students and student organizations are expected to honor contractual obligations promptly, but in case of flagrant disregard of such obligations the Dean of Student Affairs will take appropriate action.

Penalty for failure to clear up these obligations may be: a) no readmission; b) withholding of grades and transcripts; c) withholding of degree.

TELEPHONE SERVICE

Public telephone pay stations have been installed in all academic classroom buildings, the Library and the Setzer Student Center. Students are expected to use these telephones for their personal calls. Office telephones are for the use of faculty and administrative personnel. Incoming telephone calls for students are transmitted to the students only in case of emergency.

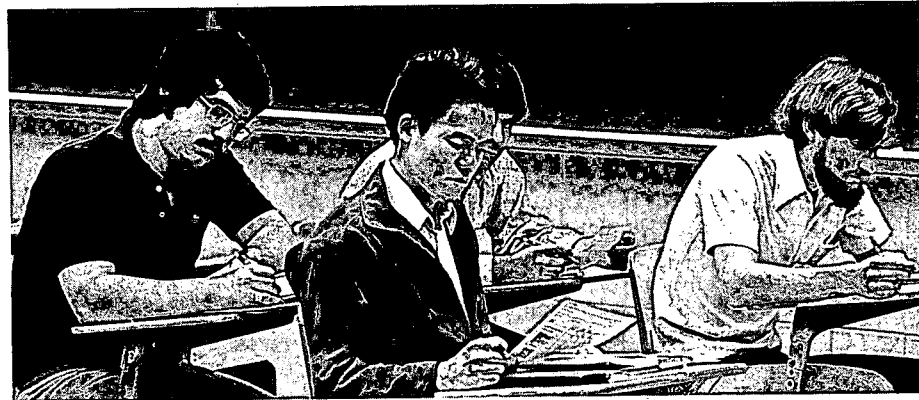
STUDENT RECORDS

The following information concerning student records maintained by Lamar University is published in compliance with the Family Education Rights and Privacy Act of 1975 (PL 93-380).

Access to records by persons other than the student will be limited to those persons and agencies specified in the statute. Records will be maintained of persons granted such access and the legitimate interest in each case.

The release of information to the public without the consent of the student will be limited to the categories of information listed below which have been designated by the University as directory information and which will be routinely released. The student

may request that any or all of this information be withheld from the public by making written request to the Admissions and Records Office. The request must be made by the last official day to register for a given session and applies to that session only. Directory information includes name; current and permanent address; telephone listing; date and place of birth; sex; marital status; major and minor; semester hour load; classification; class schedule; eligibility for and participation in officially recognized activities and sports; weight and height of members of athletic teams; dates of attendance; degrees and awards received with dates; previous educational agencies or institutions attended.



Student Activities

Student life at the University includes many activities in addition to those connected with the courses of study. Some students find an opportunity for the development of their interests in clubs and social affairs. Others participate in athletics and physical activities, such as intercollegiate and intramural sports. Still others may be interested in dramatics, music, publications, student government or religious life, in all of which there are opportunities for participation under faculty guidance and cooperation.

STUDENT GOVERNMENT ASSOCIATION

All full-time students automatically are members of the Student Association at Lamar University. Officers of the Association and representatives are elected annually and make up the Association's executive body known as the Student Government Association. The Association offers the student an opportunity to promote and to participate in self government and to participate in the management of a well-rounded program of student activities. Further information about student government may be found in the Student Handbook.

PUBLICATIONS

The University Press, the official University newspaper, is published weekly by students organized by a staff advisor. The publication serves both as a medium of training and as a source of information. Any student is eligible to become a staff member.

The Cardinal is the official yearbook of Lamar University. Any full-time student is eligible to become a staff member. Those interested are urged to apply.

The Student Handbook—Calendar is published by the Student Government Association for the benefit of all students. It combines information concerning the University, student services and student activities in a calendar format that is useful to the student throughout the entire year. Each new student receives a copy, and copies are available to other students at the start of the school year.

The Student Directory is published annually by the University. It contains a listing of the names, addresses and telephone number of students, faculty and administration.

Pulse, a student literary magazine, is published each semester by a student staff supervised by a faculty sponsor from the English Department. Any currently enrolled student may submit manuscripts for possible publication.

The Lamar Engineer is published quarterly by the undergraduate students of the College of Engineering.

SETZER STUDENT CENTER

The Richard W. Setzer Student Center provides facilities for leisure-time recreation and is the campus center for many extracurricular activities. Completed in 1971 at a cost of \$2,800,000, the Center includes a games area, TV rooms, a music listening room, snack areas, Imagery Shop, ballroom, meeting rooms, graphics center and lounges. The Center also houses the Student Government Association, Setzer Student Center Council, Interfraternity Council and the various staff members who work with these organizations.

SETZER STUDENT CENTER COUNCIL

The Setzer Student Center Council (SSCC) is the student organization responsible for providing the campus with a variety of programs and extracurricular activities, using the Center for the majority of its functions.

The SSCC is comprised of 10 committees, each having its own budget and chairman. These committees and their areas of interest are: top name, fine arts, public relations, forum, film, coffeehouse, recreation, social, video tape and University of Man.

STUDENT ORGANIZATIONS

More than 160 student organizations currently active on the campus offer membership in one or more service, professional, religious, social and mutual interest clubs. For further information, consult the Guide to Student Services.

College of Technical Arts students are encouraged to join and participate in the local chapter of V.I.C.A., Vocational and Industrial Clubs of America. This organization contributes to the individual student's awareness of the pride in his chosen field.

INTRAMURAL SPORTS PROGRAM

Under the supervision of the directors of intramural sports, the Departments of Health and Physical Education for Men and Women offer intramural programs with opportunities for participation in recreational activities. Participation is voluntary and open to all full-time students. Technical Arts students are urged to become involved in intramural sports.

RELIGIOUS CENTERS

Several denominations provide a full-time ministry to the campus and have established student centers adjacent to the campus.

In addition to credit Bible courses, the centers offer opportunities for worship, noncredit study and counseling to aid the student in developing a meaningful context for his university years.

DEVELOPMENTAL LEARNING LABORATORY

Each Fall and Spring Semester, the Dean of Student Affairs' Office sponsors the Developmental Learning Laboratory (DLL). It is designed to concentrate on two primary skill areas: developmental reading and study skills.

The goal of the DLL is to offer assistance to any student who may be having difficulty in study habits or reading skills. Complete individualization is emphasized. Students work through a developmental program at their own speed. Success has been shown in increased vocabulary, reading comprehension, reading rate and a higher degree of proficiency in the basic study skills. The laboratory tries to diagnose deficiencies before they become problem areas. Students who feel they could benefit from this program or who desire more information should contact the Office of Student Development, Room 116, Wimberly Student Affairs Building.

EX-STUDENTS ASSOCIATION

This association of former students of Lamar, including graduates and ex-students, is active on a year-round basis. The Executive Secretary of the Association maintains an office in the Wimberly Student Affairs Building.

College of Technical Arts

ASSOCIATE DEGREE PROGRAMS

The College of Technical Arts offers career-oriented education in 14 degree programs in three departments in the College. The 14 programs that lead to the Associate of Applied Science degree are:

Industrial Department:

- Automotive Mechanics*
- Diesel Mechanics
- Machine Tools
- Refrigeration and Air Conditioning Technology
- Welding**

Related Arts Department:

- Mid-Management
- Real Estate

Technical Department:

- Business Data Processing
- Drafting Technology**
- Fire Protection Technology
- Electronics Technology*
- General Secretary*
- Industrial Electricity and Electronics Technology
- Legal Secretary*
- Medical Secretary*

*Offered only at the Port Arthur Campus.

**Offered at Beaumont, Orange and Port Arthur Campuses.

All of the above two-year programs are designed to give the student training prior to entry into an occupation. Successful completion of one of these programs should provide the student with sufficient knowledge, skill and confidence to enter and advance rapidly in his selected field.

The curriculum of each program is designed to allow a student to enter in any semester and is arranged so that a student can take supporting work in either the College of Technical Arts or in other colleges in the University.

DIPLOMA PROGRAMS

Three departments in the College of Technical Arts offer diploma programs in seven fields of study. The departments that offer these programs are:

Adult Training Programs

- Cosmetology
- Marine Construction

Industrial Department

- Automotive Mechanics

Technical Department

- Accounting Clerk
- Clerical
- General Secretary
- Legal Secretary
- Medical Secretary

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CERTIFICATE PROGRAMS

In addition to the above degree and diploma programs, the College of Technical Arts offers Certificates of Completion in four programs. These programs are industrial supervision, plant maintenance and operations, real estate, and welding.

LAMAR UNIVERSITY AT ORANGE

Beginning in 1969, the university system offered courses in Orange, Texas. With the provision of facilities by the Lamar University—Orange Capital Foundation, this program expanded to offer first and second year courses in principal fields of the University in addition to expanded vocational courses, such as drafting technology. Real estate, drafting technology, industrial supervision, marine construction, welding and other career-oriented courses are offered during the extended day hours.

LAMAR UNIVERSITY—PORT ARTHUR

Port Arthur College merged with Lamar University in August 1975, with legislative funding of instructional programs at the first and second year level. Lamar University-Port Arthur courses are offered on the same basis as courses authorized for the university system in principal areas of business, education, liberal arts, as well as vocational and technical arts programs. Fields of study located only at the Port Arthur campus include automotive mechanics; electronics technology; general, legal and medical secretary; cosmetology; accounting clerk; and clerical.



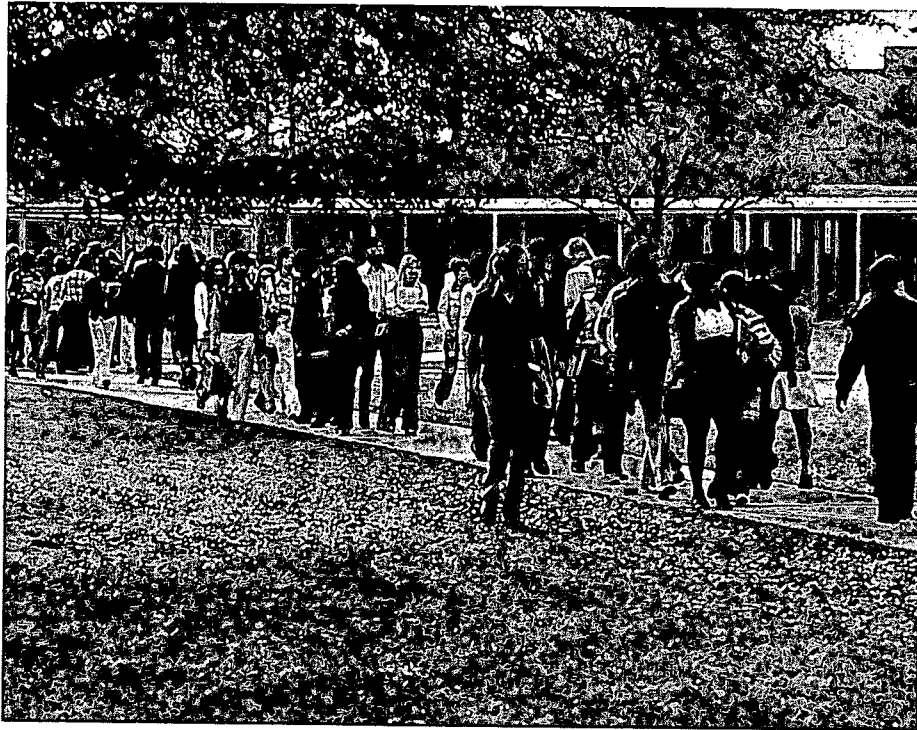
Bachelor of Science Degree

Bachelor of Science in Industrial Technology

In 1973-74, the College of Technical Arts offered a Bachelor of Science degree in Industrial Technology to students who successfully completed an approved program of study. *This program has been suspended.* Students who are enrolled in the four year program will be allowed to complete their degree as long as they are enrolled at Lamar University. Should a student fail to enroll for a Fall or Spring Semester, he will be dropped from the program. Students may submit, in writing prior to the beginning of a semester, a request to skip a semester without being dropped from the program.

Advanced Technical Arts courses will be offered when sufficient student enrollment develops. Students accepted in the program may substitute engineering courses for advanced Technical Arts courses that are required in the Industrial Technology degree.

The Department of Industrial Engineering in the College of Engineering is offering a new version of the Bachelor of Science degree in Industrial Technology. Most of a student's Technical Arts work will apply to this four year degree.



Report of the College of Technical Arts

The College of Technical Arts had the largest enrollment on the campus of Lamar University in 1976, with a total of 2,214 students.

The largest increases were in programs where employed students sought to improve their professional status by attending night classes. Enrollment increases also occurred in the day programs as more high school graduates chose to enter Technical Arts to prepare for careers with proven job opportunities.

Fire protection technology and real estate were new programs approved for the College of Technical Arts in 1975. Real estate courses had been offered in Technical Arts for many years and a certificate was granted upon completion of 15 semester hours. Students now can obtain an Associate of Applied Science degree by successfully completing the 60 semester-hour program of study. The fire protection technology program is designed to provide training for supervisory personnel for fire departments and industrial safety departments, provide in-service education for fire fighters, and to prepare graduates for related careers, such as fire insurance sales personnel.

Port Arthur College was merged into the Lamar University system in 1975, and a number of vocational-technical programs are offered at that location. Automotive mechanics, cosmetology, welding, drafting, and secretarial training programs have been approved for Lamar University at Port Arthur. The future appears bright for the Port Arthur programs. Marine construction, a one-year program for students wanting to enter the shipbuilding industry, was approved for the Orange campus.

Important facility planning for the college was accomplished in 1975. The Amelia Center buildings were acquired and Technical Arts classes are being scheduled at that location.

Plans have been approved for a new multi-story classroom building which should be completed in 1976. Upon completion of the new building, work will start on the renovation of existing facilities. This renovation will significantly increase the shop and laboratory space for 1977. These changes, along with covered walkways and campus beautification, will make the Technical Arts campus one of the best in Texas.



Industrial Department

Department Head—M. Paul Roy. *Instructor IV*—Sam Lucia. *Instructor III*—Ellis Thompson. *Instructor II*—Doyle R. Bice, Ronald I. Marble, James H. Smith, Carey B. Wesley. *Instructor I*—Hugh J. Forrest, Ronald R. Grubbs, Ben M. Jarrell, Otto A. Kriegel, Franklin C. Savage, Brian K. Tanner.

Automotive Mechanics

Automotive Mechanics is a course of study designed to prepare the student for a career in the field of automotive repair and servicing. The objectives of the program are to provide a student with the technical background to understand the operation of the modern automobile and to offer experience which will develop skills in the repair and servicing of automobiles and trucks.

This program is presently offered only at the Port Arthur campus and a student may receive a diploma for one year of study or an Associate of Applied Science degree for completion of the full two year program of study.

Recommended Program of Study

First Semester	Second Semester
A Me 131—Intro to Auto Mech* 3-0-3	A Me 134—Auto Elec Systems* 3-0-3
A Me 132—Fund of Internal Comb Eng* 3-0-3	A Me 135—Fuel & Emis Control* 3-0-3
A Me 136—Basic Shop Proc* 0-7-3	A Me 138—Engine Tune-Up* 0-7-3
A Me 137—Shop Equip & Instrumentation Appl* 0-7-3	A Me 139—Auto Troubleshooting* 0-7-3
TM 131—Fund of Math I or Math 1311 (Math Dept)* 3-0-3	TM 132—Fund of Math II or Math 1334 (Math Dept)* 3-0-3
BC 131—Basic Comm or Eng Comp (Eng Dept) 3-0-3	BC 132—Bus Comm or Eng Comp (Eng Dept) 3-0-3
18	18
Third Semester	Fourth Semester
A Me 231—Auto Chassis 3-0-3	A Me 234—Auto Transmissions 3-0-3
A Me 232—Auto Eng Overhaul* 3-0-3	A Me 235—Auto Air Cond 3-0-3
A Me 236—Chassis Repairs & Alignment Procedures 0-7-3	A Me 238—Appl of Drive Train Repairs 0-7-3
A Me 237—Adv Engine Maint* 0-7-3	A Me 239—Heater & Air Cond Service 0-7-3
JR 231—Job Rel or Soc 131 (Soc Dept)* 3-0-3	TM 232—Industrial Math 3-0-3
Elective 3-0-3	Elective 3-0-3
18	18

*Students taking these courses may receive an Automotive Mechanics diploma.

Suggested Electives: JR 232, MM 131, Wld 136, Dft 136, IEE 136.

Diesel Mechanics

Diesel Mechanics is a course of study designed to prepare the student for a career in the operation, repair and maintenance of diesel engines.

Objectives of the program are to provide the student with the technical background in the design and construction of diesel engines, and to offer experiences which will develop skills in their operation, repair and maintenance.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree.

Recommended Program of Study

First Semester	Second Semester
DM 131—Intro to Diesel Mech3-0-3	DM 134—Related Sys3-0-3
DM 132—Diesel Cycle Appl3-0-3	DM 135—Maint & Repair Prob3-0-3
DM 136—Basic Shop Proc0-7-3	DM 138—Tune-up0-7-3
DM 137—Precision Inst Usage0-7-3	DM 139—Accessory Serv0-7-3
TM 131—Fund of Mth I or Mth 1311 (Math Dept)3-0-3	TM 132—Fund of Mth II or Mth 1334 (Math Dept)3-0-3
BC 131—Basic Comm or Eng Comp (Eng Dept)3-0-3	BC 132—Bus Comm or Eng Comp (Eng Dept)3-0-3
18	18
Third Semester	Fourth Semester
DM 231—Ignition and Comb Prin3-0-3	DM 234—Overhaul Proc3-0-3
DM 232—Diesel Fuel & Lub3-0-3	DM 235—Fuel Injec System3-0-3
DM 236—Troubleshooting & Install ...0-7-3	DM 238—Dynamometer Oper & Anal0-7-3
DM 237—Adv Diesel Eng Maint0-7-3	DM 239—Diesel Eng Hydr0-7-3
TM 231—App Geo3-0-3	TM 232—Industrial Math3-0-3
JR 231—Job Rel or Soc 131 (Soc Dept)3-0-3	Elective†3-0-3
18	18

†By Approval

Suggested Technical Arts electives: BC 231, JR 232, MM 131, 132, 231, 233, MT 133, Wld 133, Dft 133, IEE 133, TM 134, BDP 131.

Machine Tools

Machine Tools is a two-year program designed to train students in the proper use of metal-removing machine tools in the modern machine shop. The curriculum is designed to develop those skills, abilities and perceptions needed to permit the graduate to advance in the industrial complex as a competent craftsman.

Objectives of the program include the promotion of desirable attitudes and the development of needed manipulative skills. Students are consistently encouraged to develop a sense of responsibility and self-reliance.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree.

Recommended Program of Study

First Semester	Second Semester
MT 131—Intro to Hand & Mac Tools .3-0-3	MT 134—Milling Machines3-0-3
MT 132—Fund of Lathe, Shaper & Planer3-0-3	MT 135—Intro to Grinding Mac3-0-3
MT 136—Basic Drill Press & Lathe . . .0-7-3	MT 138—Milling Processes0-7-3
MT 137—Bench Tools & Layout0-7-3	MT 139—Milling & Grinding Proc0-7-3
TM 131—Fund of Math I or Mth 1311 (Math Dept)3-0-3	TM 132—Fund of Math II or Mth 1334 (Math Dept)3-0-3
BC 131—Basic Comm or Eng Comp (Eng Dept)3-0-3	BC 132—Basic Comm or Eng Comp (Eng Dept)3-0-3
18	18
Third Semester	Fourth Semester
MT 231—Adv Lathe & Drill Press . . .3-0-3	MT 234—Adv Grinding & Milling Tech3-0-3
MT 232—Appl of Lathe & Drill Press3-0-3	MT 235—Prob in Grinding & Milling .3-0-3
MT 236—Multi-Machine Projects0-7-3	MT 238—Layout & Set-up0-7-3
MT 237—Gauges & Inspection0-7-3	MT 239—Mach Design & Maint0-7-3
TM 231—App Geo3-0-3	TM 232—Ind Math3-0-3
JR 231—Job Rel or Soc 131 (Soc Dept)3-0-3	Elective†3-0-3
18	18

†By Approval

Suggested Technical Arts electives: MM 131, 132, 231, 233, BC 231, JR 232, DM 133, Dft 133, IEE 133, Wld 133, 235, TM 133, 134, BDP 131.

Refrigeration and Air Conditioning Technology

Refrigeration and Air Conditioning Technology is a two-year program planned to afford the student the skills and knowledge required to install, repair and maintain environmental control equipment. Students also receive practice in trouble-shooting in-operative equipment and performing preventive maintenance on air conditioning and refrigeration equipment.

The graduate of this instructional program is awarded the Associate of Applied Science degree.

Recommended Program of Study

First Semester	Second Semester
RAC 131—Basic Refrig Prin3-0-3	RAC 134—Refrig Theory3-0-3
RAC 132—Basic Elec & Elec Devices 3-0-3	RAC 135—Comm Refrig3-0-3
RAC 136—Basic Refrig0-7-3	RAC 138—Basic Refrig & Service Proc0-7-3
RAC 137—Basic Elec Wiring & Testing Proc0-7-3	RAC 139—Basic Elec Wiring & Control Sys0-7-3
TM 131—Fund of Math I or Mth 1311 (Math Dept)3-0-3	TM 132—Fund of Math II or Mth 1334 (Math Dept)3-0-3
BC 131—Basic Comm or Eng Comp (Eng Dept)3-0-3	BC 132—Bus Comm or Eng Comp (Eng Dept)3-0-3
18	18
Third Semester	Fourth Semester
RAC 231—Prin of Air Cond3-0-3	RAC 234—Adv Air Cond3-0-3
RAC 232—Load Estimation—Heating & Cooling3-0-3	RAC 235—Cooling Towers3-0-3
RAC 236—Forced Air Heating & Cooling Sys0-7-3	RAC 238—Adv Air Cond0-7-3
RAC 237—Air Cooled Heating & Cooling Sys0-7-3	RAC 239—Heat Pumps & Absorption Sys0-7-3
TM 231—App Geo3-0-3	TM 232—Ind Math3-0-3
JR 231—Job Rel or Soc 131 (Soc Dept)3-0-3	Electives†3-0-3
18	18

†By Approval

Suggested Technical Arts electives: MM 131, 132, 231, 233, BC 231, JR 232, DM 133, Dft 133, IEE 133, Wld 133, BDP 131.

Welding

Welding is a program designed to prepare the student for a career in the fields of industrial or construction welding, either as a competent welder or in a position which requires knowledge of welding, welding equipment or supplies.

Objectives of the program include the development of skills required in modern welding techniques. Safety and proper work habits also are stressed.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree.

Recommended Program of Study

First Semester	Second Semester
Wld 131—Study of Tools, Mat'ls & Processes3-0-3	Wld 134—Processes Related to Wld ...3-0-3
Wld 132—Prin of Flame Cutting & Arc Wld Equip3-0-3	Wld 135—A.C. & D.C. Supplies3-0-3
Wld 136—Operation of Wld Tools0-7-3	Wld 138—Test Qualifications0-7-3
Wld 137—Wld & Cutting0-7-3	Wld 139—Wld and Brazing0-7-3
TM 131—Fund of Math I or Mth 1311 (Math Dept)3-0-3	TM 132—Fund of Math II or Mth 1334 (Math Dept)3-0-3
BC 131—Basic Comm or Eng Comp (Eng Dept)3-0-3	BC 132—Bus Comm or Eng Comp (Eng Dept)3-0-3
18	18

Third Semester

Wld 231—Ferrous & Nonferrous Metals	3-0-3
Wld 232—Fund of Inert Gas Wld	3-0-3
Wld 236—Ferrous Metals & Pipe	0-7-3
Wld 237—Layout & Fabrication	0-7-3
TM 231—App Geo	3-0-3
JR 231—Job Rel or Soc 131 (Soc Dept)	3-0-3

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Fourth Semester

Wld 234—Special Wld Appl	3-0-3
Wld 235—Metals & Heat Treatment	3-0-3
Wld 238—Inert Gas & Nonferrous Metal	0-7-3
Wld 239—Adv Wld	0-7-3
TM 232—Ind Math	3-0-3
Elective†	3-0-3

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†By Approval

Suggested Technical Arts electives: MM 131, 132, 231, 233, BC 231, JR 232, DM 133, Dft 133, IEE 133, MT 133, TM 133, 134.

AUTOMOTIVE MECHANICS (AMe)

131—Introduction to Automotive Mechanics. A study of shop safety, basic mechanical tool usage, and basic engine and component systems functions. Class: 3 hours. Credit: 3 semester hours.

132—Fundamentals of Internal Combustion Engines. Study and skills in inspection and diagnosis of engine problems. Assembly and repair of automotive engines. Class: 3 hours. Credit: 3 semester hours.

134—Automotive Electrical Systems. Study of automotive electrical and charging system components. Prerequisite: AMe 137. Class: 3 hours. Credit: 3 semester hours.

135—Fuel and Emission Control. An in-depth study of carburetors, repairs and adjustment of fuel system components. Prerequisite: AMe 132. Class: 3 hours. Credit: 3 semester hours.

136—Basic Shop Procedures. Practical application of shop operations, general shop safety and maintenance, use of hand tools and shop equipment. Laboratory: 7 hours. Credit: 3 semester hours.

137—Shop Equipment and Instrumentation Application. Application of study in the use of shop electrical and related equipment. Correct usage and safety will be stressed. Testing equipment operations. Laboratory: 7 hours. Credit: 3 semester hours.

138—Engine Tune-up. A program of continued study and application of carburetion and engine electrical components and valve reconditioning. Safety related to engine operation will be stressed. Application of engine timing, inspection, adjustments and repairs of automotive ignition systems. Prerequisite: AMe 137. Laboratory: 7 hours. Credit: 3 semester hours.

139—Automotive Trouble Shooting. Practical application of skills in diagnosis and repair. Prerequisite: AMe 137. Laboratory: 7 hours. Credit: 3 semester hours.

231—Automotive Chassis. Study of automotive suspension parts and front-end alignment. Prerequisite: AMe 137. Class: 3 hours. Credit: 3 semester hours.

232—Automotive Engine Overhaul. Study and development of skills in engine overhaul, and repair of malfunctions. Prerequisite: AMe 139. Class: 3 hours. Credit: 3 semester hours.

234—Automobile Transmission. Theory and repair of automatic and manual transmission repairs. Prerequisite: AMe 137. Class: 3 hours. Credit: 3 semester hours.

235—Automobile Air Conditioning. Auto air conditioning and heater service. Prerequisite: AMe 137. Class: 3 hours. Credit: 3 semester hours.

50 INDUSTRIAL

236—Chassis Repairs and Alignment Procedures. Application of study of AMe 231 in developing skills in service and repairs of springs, shocks, steering components, brakes and wheel alignment. Prerequisite: AMe 137. Laboratory: 7 hours. Credit: 3 semester hours.

237—Advanced Engine Maintenance. Study and application of major engine and component repairs, inspection and service. Prerequisite: AMe 139. Laboratory: 7 hours. Credit: 3 semester hours.

238—Application of Drive Train Repairs. Application and study of manual and automatic transmissions. Actual repairs, adjustment and inspection of transmissions, clutch assemblies, propeller shafts and joints, and rear axle differentials. Prerequisite: AMe 137. Laboratory: 7 hours. Credit: 3 semester hours.

239—Heater and Air Conditioning Service. An in-depth study of heater and air conditioning service and repairs. Prerequisite: AMe 137. Laboratory: 7 hours. Credit: 3 semester hours.

DIESEL MECHANICS (DM)

131—Introduction to Diesel Mechanics. General description and construction of engines, diesel engine principles, frames, cylinders, heads, and pistons. Class: 3 hours. Credit: 3 semester hours.

132—Diesel Cycle Application. The diesel cycle, its advantages and applications. The basic problems of operations and the design and construction of diesel engines are studied. Class: 3 hours, Credit: 3 semester hours.

133—Small Engines. The operation and repair of small internal combustion engines. Diagnosis and troubleshooting will be emphasized. Class: 3 hours. Credit: 3 semester hours.

134—Related Systems. Engine cooling, air intake systems, exhaust systems, and starting systems. Prerequisite: DM 131 and 132. Class: 3 hours. Credit: 3 semester hours.

135—Maintenance & Repair Problems. Maintenance and repair problems of the diesel engine. The checking of bearing clearances and the installation of piston rings are stressed. Prerequisite: DM 131 and 132. Class: 3 hours. Credit: 3 semester hours.

136—Basic Shop Procedures. Installation, operation, maintenance, and repair of diesel engines, hand tools and precision instruments, shop safety, fastening devices and tubing fabrication. Laboratory: 7 hours. Credit: 3 semester hours.

137—Precision Instrument Application. Installation, operation, maintenance, and repair of diesel engines, disassembly, measuring, checking for wear, proper assembly, correct use of taps and dies, flaring tools and torque wrenches. Laboratory: 7 hours. Credit: 3 semester hours.

138—Tune-up and Repair. Valve reconditioning, cylinder head repairs, engine operation and testing, diesel engine operation, shop safety, engine adjustments, cylinder and piston reconditioning. Prerequisite: DM 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

139—Accessory Servicing. Repair of water pumps, oil pumps, fuel pumps, blowers, minor engine tune-up, valve and turbocharger repair. Prerequisite: DM 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

231—Ignition and Combustion Principles. Electrical systems, governors, fuels and combustion, and fuel systems. Prerequisite: DM 131 and 132. Class: 3 hours. Credit: 3 semester hours.

232—Diesel Fuel and Lubrication. A comprehensive study of diesel fuel and lubricating oils. Basic electricity, electrical and gasoline starting systems are also stressed. Prerequisite: DM 131 and 132. Class: 3 hours. Credit: 3 semester hours.

234—Overhaul Procedures. Engine overhauling, special repairs, salvaging, hydraulics, and terms used in diesel engineering. Prerequisite: DM 231 and 232 or DM 134 and 135. Class: 3 hours. Credit: 3 semester hours.

235—Fuel Injection Systems. Fuel injection systems, hydraulics and its application, engine tune-up and troubleshooting. Prerequisite: DM 231 and 232 or DM 134 and 135. Class: 3 hours. Credit: 3 semester hours.

236—Troubleshooting and Installation. Installation, operation, maintenance, and repair of diesel engines, electrical systems, generators, alternators, cranking motors, regulators, governors, steering clutches, final drives, track and roller frames. Prerequisite: DM 138 and 139 or DM 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

237—Advanced Diesel Engine Maintenance. Installation, operation, maintenance, and repair of diesel engines, fuel systems, oil pumps, filters, oil pressure regulators, natural gas carburetors, natural gas regulators, and preventive maintenance. Prerequisite: DM 138 and 139 or DM 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

238—Dynamometer Operation and Analysis. Installation, operation, maintenance, and repair of diesel engines, fuel injection systems, fuel injection pumps, injector nozzles, unit injectors, engine performance, testing and engine dynamometer. Prerequisite: DM 236 and 237 or DM 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

239—Diesel Engine Hydraulics. Installation, operation, maintenance, and repair of diesel engines, hydraulic pumps, hydraulic controls, hydraulic power applications, advanced engine overhaul, special repairs, diagnosing, and tune-up. Prerequisite: DM 236 and 237 or DM 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

MACHINE TOOLS (MT)

131—Introduction to Hand and Machine Tools. A study of the hand and machine tools used in the modern machine shop with emphasis on safety, measuring tools, lathe, layout, drill press and the physics of metal cutting. The course includes blueprints and sketches as they apply to machine work. Class: 3 hours. Credit: 3 semester hours.

132—Fundamentals of Lathe, Shaper, and Planer. Further consideration of the lathe and its capabilities. Principles and problems of shapers and planers. Survey of carbide, ceramic and diamond cutting tools. Continued blueprint interpretations. Class: 3 hours. Credit: 3 semester hours.

133—Machine Shop. Practice in the use of hand and machine tools of the modern machine shop. Class: 3 hours. Laboratory: 1-3 hours. Credit: 3 semester hours.

134—Milling Machines. Various types of milling machines and their diverse operations. Principles with emphasis on safety and setups. Blueprint reading advanced. Class: 3 hours. Credit: 3 semester hours.

135—Introduction to Grinding Machines. Grinders of different types, grinding wheels, abrasives, heat treatment of steels and special processes. Proper setups for metal removal with grinding wheels. Blueprint interpretation extended. Class: 3 hours. Credit: 3 semester hours.

136—Basic Drill Press and Lathe. A laboratory study with use of various hand and machine tools. Special emphasis is placed on safety, bench work, the lathe, and drill press. Laboratory: 7 hours. Credit: 3 semester hours.

137—Bench Tools and Layout. A continuation of the development of manipulative skills with bench tools, gauges, layout, and setups common to the drill press, lathe, and shaper. Laboratory: 7 hours. Credit: 3 semester hours.

138—Milling Processes. Typical processes, jobs and setups are employed to further develop skills and understanding of the machining process. Additional projects are aimed at gaining experience with companion machine tools. Laboratory: 7 hours. Credit: 3 semester hours.

139—Milling and Grinding Procedures. Additional emphasis is placed on implementation of different types of mills and their attachments. The association of the grinder with the mill is introduced. Laboratory: 7 hours. Credit: 3 semester hours.

231—Advanced Lathe and Drill Press. Lathe, drill press and details of layout, setup and operations are extended. Continued emphasis on blueprint interpretations. Prerequisite: MT 131 and 132. Class: 3 hours. Credit: 3 semester hours.

232—Applications of Lathe and Drill Press. Problems encountered in diverse applications of lathes and drill presses. Precision measuring and gauging instruments. Further blueprint study. Prerequisite: MT 131 and 132. Class: 3 hours. Credit: 3 semester hours.

234—Advanced Grinding and Milling Techniques. Advanced treatment of various machine tools involved in planing, milling, and grinding of metals. Problems in blueprint reading. Prerequisite: MT 134 and 135. Class: 3 hours. Credit: 3 semester hours.

235—Problems in Grinding and Milling. Further discussion of grinding and milling principles and problems. Fundamental treatment of hydraulics as applied to machine tools. Advanced study of blueprints and sketches. Prerequisite: MT 134 and 135. Class: 3 hours. Credit: 3 semester hours.

236—Multi-Machine Projects. Jobs and processes involving the use of various machine tools with close tolerances throughout. Stress is placed on improving time consumption. Prerequisite: MT 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

237—Gauges and Inspection. A continuation of the development of manipulative skills with additional practice in close tolerance measuring and inspection. Prerequisite: MT 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

238—Layout and Setup for Mills and Grinders. Laboratory practice in the proper procedures and methods for layout and setup. Tool and cutter grinding is treated. Time utilization and accuracy are pronounced. Prerequisite: MT 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

239—Machine Design and Maintenance. Maintenance and repair of laboratory machine tools is implemented to expand ability and manipulative skills. Assembly projects which involve several machine tools are promoted. Prerequisite: MT 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

REFRIGERATION AND AIR CONDITIONING TECHNOLOGY (RAC)

131—Basic Refrigeration Principles. The history of refrigeration, theory of heat, compression cycle, metering devices, and components of the refrigeration cycle. Class: 3 hours. Credit: 3 semester hours.

132—Basic Electricity and Electrical Devices. Servicing commercial refrigeration, heat loads, defrosting, basic electric control, and wiring diagrams, capacitors and relays. Class: 3 hours. Credit: 3 semester hours.

134—Refrigeration Theory. Related knowledge necessary in chemistry for refrigeration, cooling coil and condenser design, refrigerant flow controls, electrical control requirements, manufacturers' tables, charts, diagrams, and engineering specification sheets, safety to be used in refrigeration work. Prerequisite: RAC 131 and 132. Class: 3 hours. Credit: 3 semester hours.

135—Commercial Refrigeration. Introduction to and history of commercial refrigeration trade, knowledge necessary in servicing and repairing electrical motors, motor controllers, measuring power in electrical circuits, calculating compressor tonnage capacities, steps in the systematic analysis of refrigeration circuits, and applications of commercial refrigeration. Prerequisite: RAC 131 and 132. Class: 3 hours. Credit: 3 semester hours.

136—Basic Refrigeration. Methods of cutting, flaring and bending copper tubing, soldering (hard and soft), leak testing, evacuating, and charging of reciprocating equipment. Gauges installation, removal, and calibration. Laboratory: 7 hours. Credit: 3 semester hours.

137—Basic Electrical Wiring and Testing Procedure. Electric motors, controls and transformers. Finding common start and run on sealed units, changing motor starting switches, testing and wiring single phase and shaded pole motors. Laboratory: 7 hours. Credit: 3 semester hours.

138—Basic Refrigeration and Service Procedure. Adding and removal of refrigerant, repair of domestic refrigerators and freezers. Tracing and installation of refrigeration circuits, leak testing, evacuating and system charging. Prerequisite: RAC 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

139—Basic Electrical Wiring and Control Systems. Commercial refrigeration. Installation of time clocks, automatic defrosting, and pressure defrost. Wiring of low pressure controls, magnetic starters and temperature controls. Prerequisite: RAC 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

231—Principles of Air Conditioning. Refrigeration for summer comfort cooling systems, air cycles, properties of air, psychrometric processes, application of warm air heating systems, sizing and balancing air ducts, and application and selection of humidification equipment. Prerequisite: RAC 134 and 135. Class: 3 hours. Credit: 3 semester hours.

232—Load Estimation—Heating and Cooling. Estimation of summer cooling loads, winter heat loss, refrigeration for comfort cooling and air conditioning, automatic controls for heating and cooling systems, and interpretation of electrical wiring schematics. Prerequisite: RAC 134 and 135. Class: 3 hours. Credit: 3 semester hours.

234—Advanced Air Conditioning. Air conditioning survey for commercial and/or residential system design, cost estimates, codes, calculations for condition air supply, fan types, room air conditioning and heat pumps. Prerequisite: RAC 231 and 232. Class: 3 hours. Credit: 3 semester hours.

235—Cooling Towers. Selecting, sizing, and installing cooling towers, piping and pumps. Central station equipment, water chillers, boilers, absorption refrigeration, refrigerant piping data, steam lines, electrical data and tools of the estimator. Prerequisite: RAC 231 and 232. Class: 3 hours. Credit: 3 semester hours.

236—Forced Air Heating and Cooling. Skills in the correct use of instruments, fitting and installing ducts, service of limit switches, fan controls, blowers and filters. Setting and checking oil failure switches. Prerequisite: RAC 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

237—Air Cooled Heating and Cooling Systems. Installation and service of residential and commercial cooling and heating systems. Electronic air cleaners. Humidification

equipment. Capacity testing by refrigeration and air methods. Prerequisite: RAC 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

238—Advanced Air Conditioning. Sizing, installing and checking small tonnage commercial air conditioning systems. Design and installation of primary and secondary electrical circuits. Sizing, installation and capacity testing water pumps and water circuits for air conditioning systems. Capacity testing refrigerant circuits. Acidizing condensers. Prerequisite: RAC 236 and 237. Laboratory: 7 hours. Credit: 3 semester hours.

239—Heat Pumps and Absorption Systems. Installation, operation, maintenance and repair of natural gas systems. Total electric heating and cooling systems, electrical circuits, electronic instruments, three phase motors and controls. Prerequisite: RAC 236 and 237. Laboratory: 7 hours. Credit: 3 semester hours.

WELDING (Wld)

131—Study of Tools, Materials, and Processes. A study of welding tools and materials and their relation to the welding process. Blueprint reading and sketching are initiated. Class: 3 hours. Credit: 3 semester hours.

132—Principles of Flame Cutting and Arc Welding Equipment. Study of tools, safety flame cutting, and arc welding equipment and processes. Blueprint reading is also studied. Class: 3 hours. Credit: 3 semester hours.

133—Welding. Arc welding, acetylene welding and cutting. Class: 3 hours. Laboratory: 1-3 hours. Credit: 3 semester hours.

134—Processes Related to Welding. Tools, materials, and processes as related to welding is continued. Emphasis on blueprint reading and sketching. Prerequisite: 131 and 132. Class: 3 hours. Credit: 3 semester hours.

135—A.C. and D.C. Supplies. Study of AC and DC arc welding supplies. Various arc cutting processes studied. Layout work along with blueprint reading will be stressed. Prerequisite: Wld 131 and 132. Class: 3 hours. Credit: 3 semester hours.

136—Operation of Welding Tools. Operation and use of arc welding tools and equipment; acetylene welding tools and equipment. Emphasis on safety. Laboratory: 7 hours. Credit: 3 semester hours.

137—Welding & Cutting. Continuation of arc welding in horizontal, vertical, and overhead positions. Gas welding in horizontal position. Cutting straight lines. Laboratory: 7 hours. Credit: 3 semester hours.

138—Test Qualifications. Butt plate welding and test qualifications. Flat and vertical welds on Vee groove plate. Prerequisite: 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

139—Welding and Brazing. Welding Vee groove plate in all positions. Testing for qualification in all positions. Cutting and gas welding. Introduction to brazing. Prerequisite: 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

231—Ferrous and Nonferrous Metals. Special welding techniques for ferrous and nonferrous metals. Testing procedures. Pipe layout. Sketching and blueprint interpretation. Prerequisite: Wld 131 and 132. Class: 3 hours. Credit: 3 semester hours.

232—Fundamentals of Inert Gas Welding. T.I.G., M.I.G., submerged arc. The heliarc, microwire, submerged arc, and innershield processes of welding and their applications. Blueprint reading and layout. Prerequisite: Wld 131 and 132. Class: 3 hours. Credit: 3 semester hours.

233—Advanced Metallurgy. A study of the effects of heat on the exotic metals. Specific application of metals is also covered. A study of corrosion, machining, and foundry operations and materials testing is included in the course of study. Prerequisite: Wld 235. Class: 3 hours. Credit: 3 semester hours.

234—Special Welding Application. Special welding applications, brazing, soldering and resistance welding will be studied in this course. Continuation of blueprint reading and layout. Prerequisite: Wld 134 and 135 or Wld 231 and 232. Class: 3 hours. Credit: 3 semester hours.

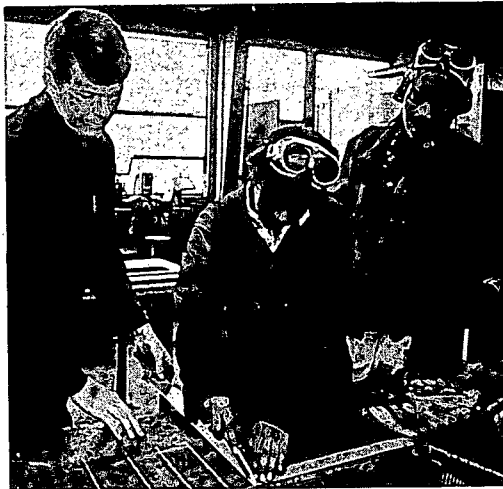
235—Metals and Heat Treatment. Introduction to metallurgy, metal manufacture, metal identification and heat treatment. Procedures for welder qualification. Blueprint reading and pipe layout continued. Prerequisite: Wld 134 and 135, or Wld 231 and 232. Class: 3 hours. Credit: 3 semester hours.

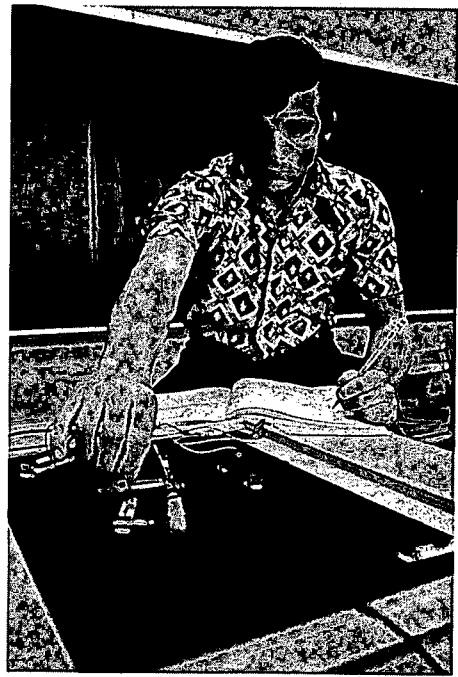
236—Ferrous Metals and Pipe. Introduction to heliarc process used with ferrous and nonferrous metals. Emphasis on arc welding ferrous metals and pipe. Safety precautions stressed. Prerequisite: Wld 136 and Wld 137. Laboratory: 7 hours. Credit: 3 semester hours.

237—Layout and Fabrication. Thorough instruction in layout, fabrication, and welding pipe installations. Precision flame cutting. Advanced heliarc welding of aluminum, stainless steel and alloys. Prerequisite: Wld 136 and 137. Laboratory: 7 hours. Credit: 3 semester hours.

238—Inert Gas and Nonferrous Metals. Operation of metal inert gas welding (M.I.G.) of steel plate and pipe. Extensive arc welding of pipe. Oxy-acetylene flame cutting and fitting. Prerequisite: Wld 138, 236 and 237. Laboratory: 7 hours. Credit: 3 semester hours.

239—Advanced Welding. Advanced ferrous and nonferrous welding. Extended T.I.G. and M.I.G. welding practice. Development of skills in setup and operation of submerged arc welding. Advanced pipe welding. Safety. Pipe test qualifications. Prerequisite: Wld 138 and 139, or Wld 236 and 237. Laboratory: 7 hours. Credit: 3 semester hours.





Related Arts Department

Department Head—Joe I. Juarez. *Instructor III*—William H. Hartford. *Instructor II*—Alice W. Cater, Nicholas V. Lampson, Max Sniffen, Deanna K. Stahl. *Instructor I*—Dan W. French, Marcia Green, Jerry B. Moseley.

Basic Communications, Technical Mathematics, and Job Relations

These courses are designed to relate to and complement the various programs offered in the College of Technical Arts. The objectives are to develop student competence in the areas of reading, applied grammar and public speaking; to develop student competence in applied mathematics; and to develop student understanding of job and human relations.

Mid-Management

Mid-Management is a program in business and supervisory management designed to develop the fundamental skills, knowledge, attitudes and experience which will enable men and women to function in decision-making positions as supervisors or junior executives. All new students must be counseled by a mid-management coordinator before registering.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree.

Recommended Program of Study

First Semester	Second Semester
MM 131—Intro to Bus 3-0-3	MM 132—Basic Eco or Eco 231 (Eco Dept) 3-0-3
MM 141—Mid-Mgt Internship 0-15-4	MM 142—Mid-Mgt Internship 0-15-4
MM 111—Mid-Mgt Seminar 1-0-1	MM 112—Mid-Mgt Seminar 1-0-1
English Composition 3-0-3	English Composition 3-0-3
Mth 1313—Finite Math 3-0-3	Mth 1315—Bus & Consumer Math 3-0-3
Electives† 3-0-3	Electives† 3-0-3
17	17
Third Semester	Fourth Semester
MM 231—Small Bus Mgt 3-0-3	MM 232—Personnel & Labor Prob 3-0-3
MM 241—Mid-Mgt Internship 0-15-4	MM 242—Mid-Mgt Internship 0-15-4
MM 211—Mid-Mgt Seminar 1-0-1	MM 212—Mid-Mgt Seminar 1-0-1
BDP 131—Ele Acc or Acc 231 (Acc Dept) 3-0-3	Spc 131—Speech Comm 3-0-3
Soc 131—Intro to Soc 3-0-3	MM 233—Fund of Supervision 3-0-3
Electives† 3-0-3	Electives† 3-0-3
17	17

†By Approval

Suggested electives: BDP 132, 141, 142, 144, BC 231, MM 133, 237, REs 1311, 1312, 1313, 1314, 1315, 1316. BA 331, 332, 333, 3301, Acc 232, Soc 334.

Real Estate

The program of study is designed to prepare a student to enter the real estate industry in the field of real estate sales, appraising, brokerage, finance, development, investment and management. It is planned for those entering the real estate industry, as well as for those who wish to expand their professional knowledge. These courses may be taken to satisfy the educational requirements of the Texas Real Estate Commission for salesman's license, renewal and broker's license.

Upon successful completion of 60 semester hours in the Real Estate degree program, a student is awarded an Associate of Applied Science degree in Real Estate.

Upon successful completion of 15 semester hours of Real Estate courses a person is awarded a Certificate of Completion in Real Estate.

Recommended Program of Study

First Semester	Second Semester
Eng Comp3-0-3	Eng Comp3-0-3
Mathematics3-0-3	Mth 1315—Consumer Math3-0-3
Eco 231—Eco or MM 1323-0-3	Acc 231—Acct or BDP 1313-0-3
REs 1311—Real Es Prin & Prac3-0-3	REs 1312—Real Es Finance3-0-3
REs 1319—Real Es Sales3-0-3	REs 1313—Real Es Appraising3-0-3
15	15
Third Semester	Fourth Semester
Gov 2321—Amer Gov3-0-3	Soc 131—Soc or JR 2323-0-3
Spc 131—Speech Comm3-0-3	REs 1315—Real Es Development3-0-3
MM 231—Small Business Mgt3-0-3	REs 1316—Real Es Invest & Mgt3-0-3
REs 1314—Real Es Law3-0-3	REs 1317—Real Es Current Trends & Problems3-0-3
REs 1318—Real Es Brokerage3-0-3	Approved Elective3-0-3
15	15

Suggested electives: Eco 232, Acc 232, REs 1301, MM 133, 237, BDP 132, 141, BA 331, 332, 3301, Soc 334, Psy 131, Gov 2322.

BASIC COMMUNICATIONS (BC)

131—Basic Communications. The objectives of this course are to develop student competence in speaking and writing and to increase student competence in the use of the Library for research in his major field. Class: 3 hours. Credit: 3 semester hours.

132—Business Communications. The preparation of specifications, inventories, orders for supplies, tools and equipment, and the basic elements of business letters and report writing through the use of practice letters and case studies. Class: 3 hours. Credit: 3 semester hours.

231—Technical Writing. A study of the techniques of technical writing and its application to the individual student's major field. Prerequisite: Students must have taken BC 131 and 132 or its academic equivalent. Class: 3 hours. Credit: 3 semester hours.

JOB RELATIONS (JR)

231—Job Relations. The purpose of this course is to present and analyze the roles of the worker and management. Included in the course will be a presentation of labor-management reactions, the evolution and growth of the American labor movement, the development and structure of American business, communicative channels, state and federal legislation that affects the worker and management, and personnel problems encountered in association with employers and employees. Class: 3 hours. Credit: 3 semester hours.

232—Human Relations. The purpose of this course is to survey the social sciences that help explain human behavior and motivation. This course will include such topics as: maturation, deviant behavior, cultural and social problems, and interpersonal relationships in the job situation. These topics are designed to help individuals better understand themselves and society. Class: 3 hours. Credit: 3 semester hours.

MATHEMATICS (TM)

111—Slide Rule. Slide rule operation; use of certain special scales; and application. Class: 1 hour. Credit: 1 semester hour.

131—Fundamentals of Mathematics I. Review and application of the fundamentals of mathematics. Fractions, decimals, per cent, ratio and proportion, weights and measures, introduction to algebra. Class: 3 hours. Credit: 3 semester hours.

132—Fundamentals of Mathematics II. Introduction to algebra, polynomials, exponents, powers and roots, solutions of linear and quadratic equations, introduction to trigonometry. Prerequisite: TM 131 or the equivalent. Class: 3 hours. Credit: 3 semester hours.

133—Applied Trigonometry. Introduction to trigonometry, trigonometric functions, use of trig tables, relations between trigonometric functions, solutions of the right triangle, radian measure, periodic functions, vectors and phasors, and polar coordinates. Prerequisite: TM 132 or the equivalent. Class: 3 hours. Credit: 3 semester hours.

231—Applied Geometry. Introduction to geometry, areas of polygons, triangles, circles, prisms, cylinders, pyramids, cones, frustrums, spheres, and special solids. Prerequisite: TM 132 or the equivalent. Class: 3 hours. Credit: 3 semester hours.

232—Industrial Mathematics. Introduction to trigonometry; logarithms; slide rules; strength of materials; work and power problems; and speed ratios of pulleys and gear. Prerequisite: TM 231. Class: 3 hours. Credit: 3 semester hours.

MID-MANAGEMENT (MM)

111, 112, 211, 212—Mid-Management Seminar. A one-hour seminar is held in conjunction with the internship. Class: 1 hour. Credit: 1 semester hour.

131—Introduction to Business. Survey of the functional areas of business and their interrelationships. Economics of industry; ownership and organization; marketing; production; personnel; finance; business controls. Class: 3 hours. Credit: 3 semester hours.

132—Basic Economics. A practical application of economic theory to business situations, emphasizing problems most frequently faced today. Class: 3 hours. Credit: 3 semester hours.

60 RELATED ARTS

133—Principles of Selling. Precepts of effective selling in the American economy. Sales process; prospecting; presentation; objectives; close. Class: 3 hours. Credit: 3 semester hours.

141, 142, 241, 242—Mid-Management Internship. The student who plans to earn a degree in Mid-Management must have at least 15 hours per week of approved supervised employment toward his career plan. Laboratory: 15 hours. Credit: 4 semester hours.

231—Small Business Management. A practical view of the problems of initiating and operating a small business. Should clarify some questions of career choice and decision-making in business. Class: 3 hours. Credit: 3 semester hours.

232—Personnel and Labor Problems. An elementary and practical approach to the problems with employees as individuals and groups, including those represented by unions. Class: 3 hours. Credit: 3 semester hours.

233—Fundamentals of Supervision. Methods and techniques of supervision; included are basic skills for the beginning supervisor as well as new ideas and broader concepts for the more experienced. Topics included are new employees, interviewing, job methods, training, safety, human relations, grievances, motivation, and discipline. Class: 3 hours. Credit: 3 semester hours.

237—Retailing. The development, organization, methods, policies of operation, and problems in the marketing structure. Class: 3 hours. Credit: 3 semester hours.

REAL ESTATE (REs)

1311—Principles and Practices. This is a study of the basic concepts and characteristics of real estate. It includes specialized areas such as real estate financing, investment, management, development, planning and property appraising. Class: 3 hours. Credit: 3 semester hours.

1312—Real Estate Finance. This course deals with the finance involved in the real estate transaction, including the economic basis for mortgage financing, second mortgage, and individual versus group or corporate financing. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.

1313—Real Estate Appraising. Methods of appraising real property from the income approach to value through residual techniques will be covered in this study. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.

1314—Real Estate Law. Law as it relates to real estate activities, including contract law, the law of agency, and a study of legal characteristics influencing the capacity of real estate to produce a flow of services and income are topics explored in this course. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.

1315—Real Estate Development. This course is a study of the techniques and related areas of residential, industrial, recreational and marine (coastal) development, and includes certain ecological ramifications. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.

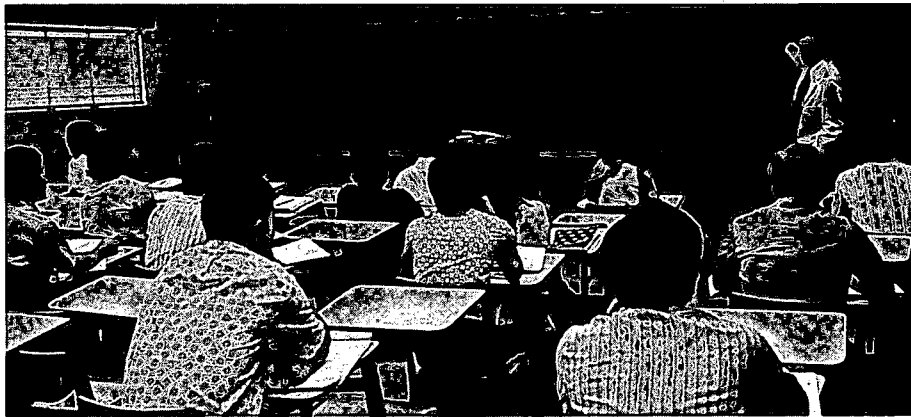
1316—Real Estate Investment and Management. This course is concerned with the analysis of real estate for investment decisions, including estimates of cash flow, the impact of transaction, and the management of investment. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.

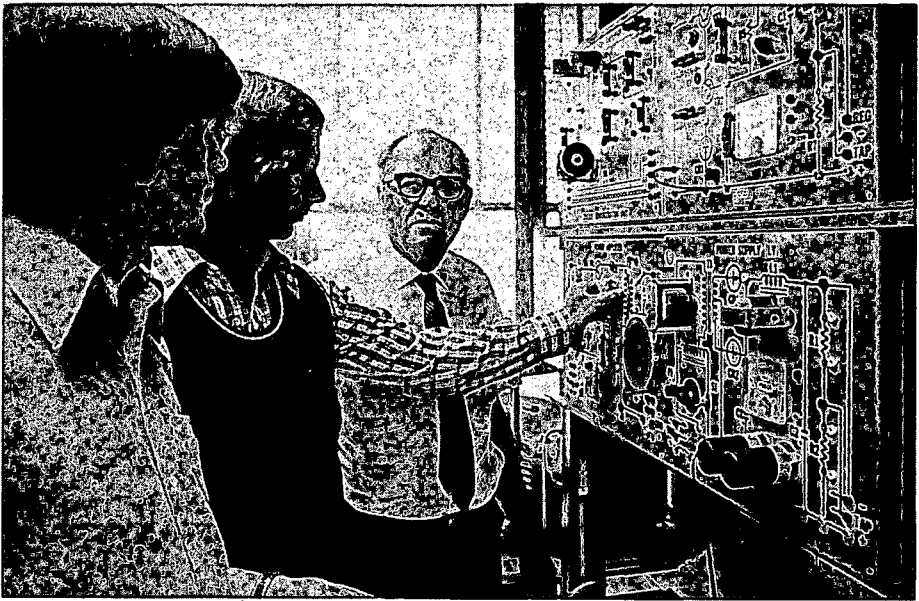
1317—Real Estate Current Trends and Problems. This course is designed to cover current problems related to the practice of real estate. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.

1318—Real Estate Brokerage. This course consists of procedures to establish a real estate office; selling; securing and listing prospects; showing the property; financing the sale; legal factors of the transaction; and closing the sale. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.

1319—Real Estate Sales. Concepts for effective selling of real estate through the sales process; prospecting, listing techniques, presentation, contracts, closings and basic objectives. Class: 3 hours. Credit: 3 semester hours.

1301—Real Estate Internship. The student works with a real estate related business for 15 hours a week. The duties and activities are aimed at providing a training program for the student. Students, as a group, meet once a week with the instructor to analyze their work experience and relate it to their course in real estate. Prerequisite: REs 1311. Class: 3 hours. Credit: 3 semester hours.





Technical Department

Department Head—Robert J. Lawrence. *Instructor III*—Tarlton J. Daigle, Ralph K. Mock. *Instructor II*—Tom M. Christian, Iris S. Drodgy, Marvin H. Hogan, Myron M. Myrick, Lenox L. Sigler, Jerry L. Wilson, *Instructor I*—Glenda Barron, Eugene G. Broussard, Lynnwood M. Clark, Roy W. Clark, Jean Cole, Joseph C. James, Ida Ross, Oscar C. Smith. *Adjunct Instructors*—Inell Moore, Beverly Parker, V. Kermit Tandberg, Virginia Whigham.

Business Data Processing

The objective of this course of study is to prepare the student for a career in computer programming within the field of business data processing. Each Business Data Processing student will be assisted in the preparation of a program of study that combines the proper balance of programming theory and application with supervised operation of Lamar University's modern high-speed computer. While this program has no admission restrictions, students are advised to examine their aptitude in this field before enrolling.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree.

Recommended Program of Study

First Semester	Second Semester
BDP 131—Ele Acc or Acc 231 (Acc Dept) 3-0-3	BDP 132—Ele Cost Acc or Acc 232 (Acc Dept) 3-0-3
BDP 141—Intro to Bus Data Proc or CS 131 (Ind Engr Dept)* 3-2-4	BDP 143—Compass 3-2-4
BDP 144—Cobol I or CS 133 (IE Dept)* 3-2-4	BDP 142—Fortran 3-2-4
TM 132—Fund of Math II or Mth 134 (Math Dept) 3-0-3	TM 133—App Trig or Mth 1334 (Math Dept) 3-0-3
BC 131—Basic Comm or Eng Comp (Eng Dept)† 3-0-3	BC 132—Bus Comm or Eng Comp (Eng Dept)† 3-0-3
17	17
Third Semester	Fourth Semester
BDP 231—System Design 3-0-3	BDP 243—Adv Fortran 3-2-4
BDP 232—RPG 3-0-3	BDP 242—Operating Systems 3-2-4
BDP 241—Cobol II 3-2-4	BDP 235—Seminar 3-0-3
BDP 244—Computer Bus Appl 3-2-4	Electives† 6-0-6
Electives† 3-0-3	
17	17

*Students who enroll in CS courses will need to take an additional elective to meet the required number of semester hours.

†By approval.

Suggested Technical Arts electives: JR 231, 232, MM 131, 132, 231, 232, TM 134, 231, BC 231.
Suggested electives in other Colleges: Psy 131, Soc 131, Phl 131, Ant 231, Spc 131, Mth 135, 136, BA 331, 332, 3301, 3302, Eco 231, 232.

Drafting Technology

This program is designed to provide basic technical information required for entry into the occupation of drafting. Engineering draftsmen prepare precise drawings and specifications from sketches, field notes and other information furnished by an engineer or designer. The majority of draftsmen specialize in some particular field of work such as piping, structural, architectural or machine manufacturing.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree. Drafting Technology is offered on all of Lamar's campuses.

Recommended Program of Study

First Semester	Second Semester
Dft 131—Drafting Instruments3-0-3	Dft 134—Arch Drafting3-0-3
Dft 132—Fund of Drafting3-0-3	Dft 135—Arch Drafting Techniques ...3-0-3
Dft 136—Basic Drafting Lab I0-6-3	Dft 138—Arch Drafting Lab I0-6-3
Dft 137—Basic Drafting Lab II0-6-3	Dft 139—Arch Drafting Lab II0-6-3
BC 131—Basic Comm or Eng Comp (Eng Dept)†3-0-3	BC 132—Bus Comm or Eng Comp (Eng Dept)†3-0-3
TM 132—Fund of Math II or Mth 134 (Math Dept)3-0-3	TM 133—App Trig or Mth 1334 (Math Dept)3-0-3
18	18
Third Semester	Fourth Semester
Dft 231—A.S.M. Standards, Pipe and Fitting Designs3-0-3	Dft 234—A.I.S.C. Spec and Standards3-0-3
Dft 232—Process Pipe Drafting3-0-3	Dft 235—Structural Design3-0-3
Dft 236—Systems Drafting Lab I0-6-3	Dft 238—Structural Design Lab I0-6-3
Dft 237—Systems Drafting Lab II0-6-3	Dft 239—Structural Design Lab II0-6-3
Dft 230—Smoley's Fundamentals3-0-3	Dft 233—App of Smoley's Tables3-0-3
JR 231—Job Relations or Soc 131 (Soc Dept)3-0-3	Elective†3-0-3
18	18

†By Approval

Suggested Technical Arts electives: Dft 261, 1311, MM 131, 132, 231, BC 231, JR 232, MT 133, IEE 133.

Electronics Technology

The program is designed to provide the student with an opportunity to develop the skills needed for a career as an electronics technician. The student may specialize in one of five fields of study in electronics: Industrial Electronics and Instrumentation; Marine Radio Operator; Medical Electronics; Radio and TV Broadcast Technician; and Television Servicing. A graduate of the two-year program of study will receive an Associate of Applied Science degree.

This program is offered at the Port Arthur campus.

Recommended Program of Study

First Semester	Second Semester
IEE 131—DC Theory & Cir3-0-3	IEE 134—AC & DC Circuit Anal 3-0-3
IEE 132—AC Theory3-0-3	IEE 135—Vacuum Tube Amplifiers3-0-3
IEE 136—Basic DC Elec Lab0-6-3	IEE 138—AC and DC Lab Anal0-6-3
IEE 137—Basic AC Elec Lab0-6-3	IEE 139—Vacuum Tube Cir/Anal0-6-3
TM 131—Fund of Math I or Math 134 (Math Dept)3-0-3	JR 231—Job Relations3-0-3
BC 131—Basic Comm or Eng Comp Dept)3-0-3	IEE Elective*3-0-3
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18	18

Third Semester	Fourth Semester
IEE 230—Intro To Digital Logic3-0-3	IEE 233—Trans & Rec3-0-3
IEE 231—Transistors3-0-3	IEE 234—TTL Integ Cir I3-0-3
IEE 232—Transistor Anal3-0-3	IEE 235—TTL Integ Cir II3-0-3
IEE 236—Solid State Devices I0-6-3	IEE 238—Digital Logic Lab I0-6-3
IEE 237—Solid State Devices II0-6-3	IEE 239—Digital Logic Lab II0-6-3
IEE Elective*3-0-3	IEE Elective*3-0-3
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18	18

*Students should select electives from the following categories:

- Industrial Electronics and Instrumentation: IEE 2315, 2325, 2333.
- Marine Radio Operator: IEE 2317, 2320, 2322.
- Medical Electronics: IEE 2331, 2332, 2333.
- Radio and TV Broadcast Technician: IEE 2313, 2327, 2328.
- Television Servicing: IEE 2325, 2326, 2333.

Fire Protection Technology

The objectives of this program are to provide training for supervisory personnel for fire departments and industrial safety departments, provide inservice education for fire fighters, and to prepare graduates for related careers, such as fire insurance sales personnel. The Fire Protection Technology courses are generally taught during the extended day hours and the schedule of classes allows attendance by students working shifts.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree.

Recommended Program of Study

First Semester	Second Semester
FT 131—Fund of Fire Protection3-0-3	FT 132—Fire Protection Systems3-0-3
FT 133—Indus Fire Protection I3-0-3	FT 134—Fire Prevention3-0-3
Eng 1311—English Comp3-0-3	FT 135—Ind Fire Protection II3-0-3
Chm 143—Intro Chem3-2-4	Spc 131—Speech Comm3-0-3
Mth 1311—Survey of Mathematics3-0-3	Chm 144—Intro Chem3-2-4
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16	16

Third Semester

FT 230—Fire Admin I	3-0-3
FT 231—Bldg Codes & Const	3-0-3
FT 232—Fire & Arson Inves	3-0-3
BC 231—Tech Writ	3-0-3
Gov 2321—Intro to Amer Gov	3-0-3
Approved Elective	3-0-3

Fourth Semester

FT 233—Hazardous Mat	3-0-3
FT 234—Fire Admin II	3-0-3
FT 241—Fire Fighting Tactics	3-2-4
Approved Electives	9-0-9

19

18

Industrial Electricity and Electronics Technology

This program is designed to provide the student with an opportunity to develop the necessary skills involved in the repair and maintenance of industrial electrical and electronics equipment.

The objective of this program is to develop an understanding of the underlying theories, technical information, safety factors and related occupational information to assure sound judgments and proper procedures needed for an electronics technician trainee. Graduates will be prepared to enter one of the many specialized fields associated with the electronics trade.

A graduate of this two-year instructional program is awarded the Associate of Applied Science degree. This program is offered at the Beaumont, Orange, and Port Arthur campuses.

Recommended Program of Study

First Semester

IEE 131—DC Theory & Circuits	3-0-3
IEE 132—AC Theory	3-0-3
IEE 136—DC Elec Lab	0-6-3
IEE 137—Basic AC Elec Lab	0-6-3
TM 111—Slide Rule	1-0-1
TM 132—Fund of Math II or Math 134 (Math Dept)	3-0-3
BC 131—Basic Comm or Eng Comp (Eng Dept)†	3-0-3

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Second Semester

IEE 134—AC & DC Circuit Analysis	3-0-3
IEE 135—Vacuum Tube Amplifiers	3-0-3
IEE 138—AC & DC Lab Anal	0-6-3
IEE 139—Vacuum Tube Circuit Anal	0-6-3
TM 133—App Trig or Math 1334 (Math Dept)	3-0-3
BC 132—Bus Comm or Eng Comp (Eng Dept)†	3-0-3

18

Third Semester

IEE 231—Transistors	3-0-3
IEE 232—Transistor Anal	3-0-3
IEE 236—Solid State Devices I	0-6-3
IEE 237—Solid State Devices II	0-6-3
IEE 230—Intro to Digital Logic	3-0-3
JR 231—Job Rel or Soc 131 (Soc Dept)	3-0-3

18

Fourth Semester

IEE 234—TTL Integrated Cir I	3-0-3
IEE 235—TTL Integrated Cir II	3-0-3
IEE 238—Digital Logic Lab I	0-6-3
IEE 239—Digital Logic Lab II	0-6-3
IEE 233—Trans & Rec	3-0-3
Elective*	3-0-3

18

†By approval

Suggested Technical Arts electives: Dft 133, MM 131, 132, 231, 232, BC 231, JR 232, MT 133, Wld 133.

Office Occupations

The objectives of the Office Occupations program are to provide skills needed for a career in five different secretarial areas and to provide in-service education for office personnel wanting to improve their skills. Students may obtain an Associate of Applied Science degree as a Medical Secretary, Legal Secretary or General Secretary. Students also may receive a diploma in one of the following areas: Accounting Clerk, Clerical, General Secretary, Legal Secretary and Medical Secretary.

This program is offered on the Port Arthur Campus.

Recommended Program of Study

General Secretary

First Semester	Second Semester
OO 141—Beginning Typing*3-3-4	OO 142—Inter Typing*3-3-4
BC 131—Basic Comm or Eng 1311* ...3-0-3	OO 144—Inter Shorthand*3-3-4
TM 134—Business Math*3-0-3	BC 132—Basic Comm or Eng 1312* ...3-0-3
OO 143—Beginning Shorthand*3-2-4	OO 131—Bus Machines*0-6-3
MM 131—Intro to Business3-0-3	OO 135—Bus Legal Procedure*3-0-3
17	17
Third Semester	Fourth Semester
OO 241—Adv Shorthand*3-3-4	OO 238—Machine Transcription*3-0-3
OO 231—Adv Typing*1-2-3	OO 235—Sec Office Proc-Gen*0-6-3
BDP 141—Intro to Bus Data Proc3-2-4	Spc 131—Speech Comm3-0-3
BDP 131—Elem Acct*3-0-3	JR 232—Human Relations*3-0-3
Elective3-0-3	Elective3-0-3
17	15

Suggested Electives: MM 132, 231, 232, Gov 2321, OO 136, 137, 138.

*These courses are required for an Office Occupations diploma - General Secretary.

Recommended Program of Study

Legal Secretary

First Semester	Second Semester
OO 141—Beginning Typing*3-3-4	OO 142—Intermediate Typing*3-3-4
BC 131—Basic Comm or Eng 1311* ...3-0-3	OO 144—Intermediate Shorthand*3-3-4
TM 134—Bus Mathematics*3-0-3	BC 132—Basic Comm or
OO 143—Beginning Shorthand*3-2-4	Eng 1312*3-0-3
MM 131—Intro to Business3-0-3	OO 131—Bus Machines*0-6-3
17	OO 135—Bus Legal Procedure*3-0-3
	17

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Third Semester

OO 241—Advanced Shorthand*	3-3-4
OO 231—Advanced Typing*	1-2-3
BDP 141—Intro to Bus Data Proc	3-2-4
BDP 131—Elementary Acct*	3-0-3
OO 238—Machine Transcription*	0-3-3
	17

Fourth Semester

Gov 2321—Intro to Amer Gov	3-0-3
OO 236—Sec Office Pro - Legal*	0-6-3
Spc 131—Speech Comm	3-0-3
JR 232—Human Relations*	3-0-3
Elective	3-0-3
	15

Suggested Electives: MM 132, 231, 232, OO 136, 137, 138.

*These courses are required for an Office Occupations diploma - Legal Secretary.

Recommended Program of Study

Medical Secretary

First Semester

OO 141—Beginning Typing*	3-3-4
BC 131—Basic Comm or Eng 1311*	3-0-3
TM 134—Bus Mathematics*	3-0-3
OO 143—Beginning Shorthand*	3-2-4
MM 131—Intro to Business	3-0-3
	17

Second Semester

OO 142—Intermediate Typing*	3-3-4
OO 144—Intermediate Shorthand*	3-3-4
BC 132—Basic Comm or Eng 1312*	3-0-3
OO 131—Bus Machines*	0-6-3
Approved Elective	3-0-3
	17

Third Semester

OO 238—Machine Transcription*	0-3-3
OO 231—Advanced Typing*	1-2-3
BDP 141—Intro to Bus Data Proc	3-2-4
BDP 131—Elementary Acct*	3-0-3
Elective	3-0-3
	16

Fourth Semester

OO 135—Bus Legal Procedure*	3-0-3
OO 237—Sec Office Proc Med*	0-6-3
Spc 131—Speech Comm	3-0-3
JR 232—Human Relations*	3-0-3
Elective	3-0-3
	15

Suggested Electives: MM 132, 231, 232, OO 136, 137, 138, Bio 133, 134.

*These courses are required for an Office Occupations diploma - Medical Secretary.

Recommended Program of Study

Accounting Clerk

First Semester

OO 141—Beginning Typing	3-3-4
BC 131—Basic Comm	3-0-3
OO 131—Business Machines	0-6-3
TM 134—Business Math	3-0-3
BDP 131—Elementary Acct I	3-0-3
	16

Second Semester

BDP 141—Intro to Bus Data Proc	3-2-4
OO 137—Partnership and Corp Acct	3-0-3
OO 138—Payroll Procedures	3-0-3
OO 142—Intermediate Typing	
or	
OO 135—Business Legal Proc	3-3-4
JR 232—Human Relations	3-0-3
	17

Third Semester	
BDP 236—Intermediate Acct	3-0-3
OO 235—Sec Office Proc - Gen	0-6-3
	6

Recommended Program of Study

Clerical

First Semester	Second Semester
OO 141—Beginning Typing	3-3-4
BC 131—Basic Comm	3-0-3
OO 131—Bus Machines	0-6-3
TM 134—Bus Mathematics	3-0-3
OO 135—Bus Legal Procedure	3-0-3
	16

Third Semester	
OO 231—Advanced Typing	1-2-3
OO 235—Sec Off Proc - Gen	0-6-3
	6

Suggested Electives: BDP 131, MM 132, 231, 232, OO 132, 136, 137, 138.

BUSINESS DATA PROCESSING (BDP)

131—Elementary Accounting. Double-entry accounting practices and procedures applied to special journals, working papers, subsidiary records, and the preparation of financial statements for a sole proprietorship with an introduction to partnerships. Class: 3 hours. Credit: 3 semester hours.

132—Elementary Cost Accounting. Accounting for material, labor, and overhead under job cost, process cost, and standard cost systems. Prerequisite: BDP 131 or consent of the instructor. Class: 3 hours. Credit: 3 semester hours.

141—Introduction to Business Data Processing. A survey of data processing from its beginning. Introduction to internal data representation, file concepts, record layouts, unit record equipment, and an overview of the programming languages to be encountered in later courses. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

142—Fortran. A study of the Fortran programming language. Progressive techniques are developed through problem definition, flowcharting, coding, documentation, and execution. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

143—Compass. An introduction to the Compass language using (1) computer registers, (2) opcode interpretation/execution, and (3) assembled program structure. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

144—Cobol I. A study of the Cobol programming language. Progressive techniques are developed through problem definition, flowcharting, coding, documentation, and program execution. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

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231—System Design. Fundamentals of system design analysis and documentation. Problems in designing, analyzing, changing and existing system, and implementation. Class: 3 hours. Credit: 3 semester hours.

232—RPG. A study of the RPG language. Progressive techniques are developed through problem definition, flowcharting, and coding. Class: 3 hours. Credit: 3 semester hours.

235—Seminar. A seminar class which promotes advanced study in programming. Students work on special projects which increase their skill in writing and correcting programs. Prerequisite: Consent of instructor. Class: 3 hours. Credit: 3 semester hours.

236—Intermediate Accounting. A continuation of accounting principles begun in BDP 131. Prerequisite: BDP 131. Class: 3 hours. Credit: 3 semester hours.

241—Cobol II. A continuation of BDP 144 with emphasis on table handling and disk file processing. Corequisite: BDP 144. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

242—Operating Systems. A study of operating systems and their use in third generation computers. Utilities, sorts, and merges will also be covered. Prerequisite: Consent of the instructor. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

243—Advanced Fortran. The application of Fortran to business and numerical problems. Prerequisite: BDP 142. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

244—Computer Business Applications. Defining problems for business application and programming the solutions using primarily the Cobol language. Corequisite: BDP 241. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

DRAFTING TECHNOLOGY (Dft)

131—Drafting Instruments. The proper use of all drafting instruments, the construction of freehand and mechanical lettering, dimensioning, multiview projection, and geometrical construction. Class: 3 hours. Credit: 3 semester hours.

132—Fundamentals of Drafting. Instruments and materials of the professional draftsman. The course will include geometric constructions, orthographic projections, sections, conventions, various methods of pictorial drawing and other technology as required in the profession. Class: 3 hours. Credit: 3 semester hours.

133—Introduction to Drafting. A course designed to develop illustrative and graphic communication skills, with emphasis on presenting information effectively by using diagrams, drawings, prints, sketches, graphs, and charts drawn freehand and employing commonly available drawing aids such as straight edges, squared and graph paper, and similar aids. Class: 1 hour. Laboratory: 4 hours. Credit: 3 semester hours.

134—Architecture Drafting. Architecture, covering FHA specifications, drafting techniques, rendering techniques, elevations, building codes, architectural styles, and history. Prerequisite: Dft 131 and 132. Class: 3 hours. Credit: 3 semester hours.

135—Architecture Drafting Techniques. Architecture drafting, floor plans, sectional views, electrical plans, theory of design, cost analysis, plumbing, specification and pictorial drawings. Prerequisite: Dft 131 and 132. Class: 3 hours. Credit: 3 semester hours.

136—Basic Drafting Laboratory I. This is the first in a series of four courses in the use of drafting instruments, freehand and mechanical lettering, conventional signs and symbols, orthographic projection and pictorial drawing. This is a comprehensive

laboratory course in basic drafting procedures and skills and is planned as a preparation for the three succeeding courses which will provide practice in the skills required in specialized types of drafting. Laboratory: 6 hours. Credit: 3 semester hours.

137—Basic Drafting Laboratory II. This course is a continuation of Dft 136. Laboratory: 6 hours. Credit: 3 semester hours.

138—Architectural Drafting Laboratory I. Drafting of plans for construction in wood, metals and masonry. The course will include foundations, floor and roof plans, window and door sections, and other details of construction. Prerequisite: Dft 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

139—Architectural Drafting Laboratory II. This is a continuation of Dft 138. Prerequisite: Dft 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

1311—Blueprint Reading. A study of lines, views, symbols and dimensions involved in reading blueprint and shop sketches. Practice in making freehand sketches of simple objects. Class: 3 hours. Credit: 3 semester hours.

230—Smoley's Fundamentals. Introduction and use of Smoley's Tables by the professional draftsman. Prerequisite: TM 133. Class: 3 hours. Credit: 3 semester hours.

231—A.S.M. Standards, Pipe and Fitting Designs. A study of pipe and fittings, designs, symbols, and specifications, sizing process lines and process symbols. Drafting of flow diagrams, vessels, heat exchangers, pumps, instruments, compressors, and mechanical equipment. Prerequisite: Dft 131 and 132. Class: 3 hours. Credit: 3 semester hours.

232—Process Pipe Drafting. Process pipe drafting covering nomenclature, plans, elevations, details, and process equipment. Prerequisite: Dft 131 and 132. Class: 3 hours. Credit: 3 semester hours.

233—Application of Smoley's Tables. Use and application of Smoley's Tables by the professional structural draftsman. Prerequisite: Dft 230. Class: 3 hours. Credit: 3 semester hours.

234—A.I.S.C. Specifications and Standards. A.I.S.C. specifications and standards, basic strength of materials, structural theory and data. Detailing structure members and connections. Prerequisite: Dft 131 and 132. Class: 3 hours. Credit: 3 semester hours.

235—Structural Design. Structural steel, completion of column details, brace details, skewed connections, moment connections, seated connections, erection drawings, stair, and miscellaneous details, design using A.I.S.C. standards of beams and columns working with kip loads. Prerequisite: Dft 131 and 132. Class: 3 hours. Credit: 3 semester hours.

236—Systems Drafting Laboratory I. A study of pipe and fittings, designs, symbols and specifications, sizing process lines and process symbols. Drafting of flow diagram, vessels, heat exchangers, pumps, instruments, compressors, and mechanical equipment. Prerequisite: Dft 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

237—Systems Drafting Laboratory II. This course is a continuation of Dft 236. Prerequisite: Dft 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

238—Structural Design Laboratory I. Drafting of plans, sections, and details and A.I.S.C. specifications for industrial structures which will include structural steel, pipe and concrete reinforcing rods. Prerequisite: Dft 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

239—Structural Design Laboratory II. This course is a continuation of Dft 238. Prerequisite: Dft 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

261—Design Project Seminar. This course designed to stimulate and develop the design drawing skills of the student. The course will include one major design project

which includes a scale model and complete set of working drawings, selected by the student and approved by the instructor. Prerequisite: consent of instructor. Class: 1 hour. Laboratory: 10 hours. Credit: 6 semester hours.

331—Advanced Design Drafting. A.I.S.C. Codes of Standard Practice For Steel Buildings and Bridges; A.I.S.C., A.S.T.M., A.W.S., V.S.D., and V.B.C. specifications; design; fabrication and erection of steel, concrete, and pipe structures. Class: 3 hours. Credit: 3 semester hours.

332—Machine Tools Design. Drawings associated with machine shop operation; threads, keys, rivets, fasteners, springs, jigs, gears, and cams. Symbols, abbreviation, charts, graphs and diagrams for the machine shop. Class: 3 hours. Credit: 3 semester hours.

336—Advanced Design Laboratory. Drawing of the various methods of connecting the component members of a structure using A.I.S.C., A.S.T.M., A.W.S., U.S.D., and U.B.C. specification. Corequisite: Dft 331. Laboratory: 6 hours. Credit: 3 semester hours.

337—Machine Tools Design Laboratory. The actual drawings of machine parts and the use of drawing instruments that are used by machine design draftsmen. Laboratory: 6 hours. Credit: 3 semester hours.

431—Advanced Reproductive Drafting Techniques. Reproduction techniques, such as microfilming, blueprinting, directo-printing, photo-copying, and other methods, will be studied. Class: 3 hours. Credit: 3 semester hours.

437—Individual Project Laboratory. A seminar project laboratory in which the student makes a scale or full-size model complete with working drawing of a design project selected by the student and approved by the instructor. Class: 3 hours. Credit: 3 semester hours.

FIRE PROTECTION TECHNOLOGY (FT)

131—Fundamentals of Fire Protection. 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 plans; employee organization; a discussion of current related problems and review of expanding future fire protection problems. Class: 3 hours. Credit: 3 semester hours.

132—Fire Protection Systems. Study of the required standard for water supply; special hazards protection systems; automatic sprinkler and special extinguishing system; automatic signaling and detection system; rating organizations and underwriting agencies. Class: 3 hours. Credit: 3 semester hours.

133—Industrial Fire Protection I. 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. Class: 3 hours. Credit: 3 semester hours.

134—Fire Prevention. 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 aspects; development and implementation of a 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 organization. Engineering as a solution to fire hazards. Class: 3 hours. Credit: 3 semester hours.

135—Industrial Fire Protection II. 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 problems and other special organizations; an in-depth study of specific industrial processes, equipment, facilities, and work practices to understand potential hazards and techniques to detect and control such hazards. Field trips to selected plants and demonstrations of new techniques, equipment and innovations. Class: 3 hours. Credit: 3 semester hours.

230—Fire Administration I. An in-depth study of organization and management as related to a fire department including budgeting, maintenance of records and reports, and management of fire department officers. 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. Class: 3 hours. Credit: 3 semester hours.

231—Building Codes and Construction. 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 Code. Class: 3 hours. Credit: 3 semester hours.

232—Fire and Arson Investigation. A study of the detection of arson, investigation techniques, case histories, gathering and preserving of evidence; preparing for a court case; selected discussion of laws, decisions and opinions; kinds of arsonists, interrogation procedures, cooperation and coordination between fire fighters and arson investigators and other related topics. Class: 3 hours. Credit: 3 semester hours.

233—Hazardous Materials I. 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. Class: 3 hours. Credit 3 semester hours.

234—Fire Administration II. 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. Class: 3 hours. Credit: 3 semester hours.

235—Hazardous Materials II. 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 radioactive 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. Class: 3 hours. Credit: 3 semester hours.

236—Fire Safety Education. 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. Class: 3 hours. Credit: 3 semester hours.

237—Legal Aspects of Fire Protection. A study of legal rights and duties, liability concerns and responsibilities of the fire department while carrying out their duties. Introduction and basic concepts of Civil and Criminal law, the Texas and Federal judicial structure, and cities' liability for acts of the fire department and fire prevention bureaus. An in-depth study of various cases concerning fire fighters, fire departments, municipalities. Class: 3 hours. Credit: 3 semester hours.

238—Fire Service Communications. The development of fire alarm systems, the various types of systems, installation, operation and testing of the most common systems, receiving, dispatching, and radio communication procedures; F.C.C. regulations, the fire alarm operations office, mutual aid systems, fire station communications and facilities, response and fire ground procedures, emergency operations, code and numbering systems, required records and reports; technological advances. Class: 3 hours. Credit: 3 semester hours.

241—Fire Fighting Tactics and Strategy. 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. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

INDUSTRIAL ELECTRICITY AND ELECTRONICS TECHNOLOGY (IEE)

131—DC Theory and Circuits. Electron theory, Ohm's Law, power, simple series and parallel circuits, combined series/parallel circuits, and Kirchhoff's laws. Class: 3 hours. Credit: 3 semester hours.

132—AC Theory. Electromagnetism, generation and characteristics of alternating voltage and current, inductance transformers, inductive reactance capacitance, and capacitive reactance. Class: 3 hours. Credit: 3 semester hours.

133—Basic Electricity. Introduction to the field of electricity and electronics. Class: 3 hours. Credit: 3 semester hours.

134—AC and DC Circuit Analysis. Complex numbers for AC circuits, simple RL and RC circuits, series and parallel RLC circuits, series and parallel resonance, and network theorems. Class: 3 hours. Credit: 3 semester hours.

135—Vacuum Tube Amplifiers. Principles and characteristics of vacuum tubes, vacuum tube power supplies, audio and RF amplifiers and circuits, and basic oscillators. Class: 3 hours. Credit: 3 semester hours.

136—Basic DC Electronic Laboratory. Basic electronic component and symbol familiarization; wiring techniques for DC series; parallel, and combination circuits; voltmeter, ohmmeter, and ammeter hookup and reading techniques; and DC power supply use and operation. Laboratory: 6 hours. Credit: 3 semester hours.

137—Basic AC Electronics Laboratory. Familiarization with VTVM, oscilloscope, and audio generator; experimentation and analysis of the characteristics of series and

parallel inductance and capacitance, and transformers. Laboratory: 6 hours. Credit: 3 semester hours.

138—AC and DC Laboratory Analysis. Familiarization with the RF generator; construction and analysis of AC circuits containing resistance, inductance, and capacitance; series and parallel resonance. Laboratory: 6 hours. Credit: 3 semester hours.

139—Vacuum Tube Circuit Analysis. Construction and analysis of half-wave and full-wave power supplies, voltage doubler, and bridge circuits; triode tube characteristics, audio voltage and power amplifier circuits; RF amplifier and oscillator circuits. Laboratory: 6 hours. Credit: 3 semester hours.

230—Introduction to Digital Logic. Binary octal, and hexadecimal number systems; logic symbols and gating functions; truth tables; implementing and deriving logical expressions; Boolean laws; use of Boolean laws and Veitch diagrams to simplify logical expressions. Class: 3 hours. Credit: 3 semester hours.

231—Transistors. Semiconductor materials, junction diodes and transistors, characteristic curves, transistor circuits, common-emitter, common-base, and common-collector configurations. Class: 3 hours. Credit: 3 semester hours.

232—Transistor Analysis. Analysis using the direct current and graphical methods, linear circuits oscillators, temperature considerations, and transistor power supplies. Class: 3 hours. Credit: 3 semester hours.

233—Transmitters and Receivers. Principles of modulation and transmitters, transmitter circuits, principles of t-r-f and superheterodyne receivers, and receiver circuits. Class: 3 hours. Credit: 3 semester hours.

234—TTL Integrated Circuits I. Oscillators-JK and D-type flip-flops, counters and counting techniques, shift-registers, and whole-systems applications. Class: 3 hours. Credit: 3 semester hours.

235—Transistor and Integrated Circuit Analysis. Analysis using the direct current and graphical methods, linear circuits, oscillators, temperature consideration and transistor power supplies. Prerequisite: IEE 231 and 232. Class: 3 hours. Credit: 3 semester hours.

236—Solid State Devices I. Laboratory experiments in the characteristics of solid state devices, transistor familiarization, and basic transistor circuit arrangement. Laboratory: 6 hours. Credit: 3 semester hours.

237—Solid State Devices II. Laboratory experiments in the construction of solid state circuitry, audio voltage and power amplifiers, oscillators, SCR rectifiers, and transistorized cathode ray oscilloscopes. Laboratory: 6 hours. Credit: 3 semester hours.

238—Digital Logic Laboratory I. Laboratory experiments designed to give a thorough basic knowledge of the various types of TTL devices. Laboratory: 6 hours. Credit: 3 semester hours.

239—Digital Logic Laboratory II. Laboratory experiments designed to put the TTL devices and IC chips to practical and use work. Laboratory: 6 hours. Credit: 3 semester hours.

2313—Radio and Television First Phone License Preparation. This subject covers the Federal Communications Commission Rules and Regulations and reviews the theory necessary for the student to pass the FCC First-Class Radiotelephone License test. Prerequisite: IEE 135 and IEE 231. Class: 3 hours. Credit: 3 semester hours.

2315—Industrial Electronics. The application of active and passive networks in control on industrial control and manufacturing processes. Prerequisite: The core material offered in IEE 135 and IEE 231. Class: 3 hours. Credit: 3 semester hours.

2317—Code. International Morse Code. Receiving is taught by the use of magnetic tapes and notes. Code sending is taught by actual practice in sending, using a hand key and oscillator. A code speed of 16 wpm groups and 20 wpm plain language is required. Laboratory: 6 hours. Credit: 3 semester hours.

2320—Marine Equipment. A coverage of shipboard radiotelegraph and communication equipment. Direction finders loran is included. Prerequisite: IEE 131 and IEE 132. Class: 3 hours. Credit: 3 semester hours.

2322—FCC Radiotelegraph License Preparation. This course consists of FCC Rules and Regulations and reviews the theory necessary for the student to pass the FCC Second-Class Radiotelegraph License test. Prerequisite: IEE 135 and IEE 231. Class: 3 hours. Credit: 3 semester hours.

2325—Television Servicing Laboratory I. A coverage of television from the aspect of home entertainment, including repair and maintenance. Prerequisite: IEE 233. Laboratory: 6 hours. Credit: 3 semester hours.

2326—TV Servicing Laboratory II. A continued coverage of television from the aspect of home entertainment, including repair and maintenance. Prerequisite: IEE 2325. Laboratory: 6 hours. Credit: 3 semester hours.

2327—Radio Broadcast Equipment. A study of the radio broadcast equipment which is used at the radio broadcast transmitter and the radio broadcast studio such as dual console, microphones, reel to reel and cartridge recorder and playback units, turntables. Prerequisite: IEE 131 and 132. Class: 3 hours. Credit: 3 semester hours.

2328—Television Broadcast Equipment. A study of the television equipment which is used at a television broadcast transmitter and the equipment used at a television broadcast studio, such as the television camera chain and the video tape recorder. Prerequisite: IEE 2327. Class: 3 hours. Credit: 3 semester hours.

2331—Medical Instrumentation I. A study of instruments used in the medical profession, such as Burdick EK-2 and EK-5 Electrocardiograph, LGDD Lifeguard monitor, cardioscope and heart rate meter. Electrodyne PM 65S, Pacemaker-alarm-monitor and three inch Electrocardioscope. Prerequisite: IEE 135 and and IEE 230. Class: 3 hours. Credit: 3 semester hours.

2332—Medical Instrumentation II. A study of the Hewlett-Packard Electromyograph 1510 A-1, EMG measurements 1510 A-1, Beckman type CE Electroencephalograph. Patient safety. Prerequisite IEE 2331. Class: 3 hours. Credit: 3 semester hours.

2333—Industrial Instrumentation. A study of the practical application of the use of instruments in the petrochemical operation and manufacturing processes. This includes fundamental theory of thermocouples, Rayotube temperature detectors, electrolytic conductivity measurements, pH measurements, chart records, servicing equipment, position adjusting and current adjusting control systems. Prerequisite: IEE 2315. Class: 3 hours. Credit: 3 semester hours.

235—Transistor and Integrated Circuit Analysis. Analysis using the direct current and graphical methods, linear circuits, oscillators, temperature consideration and transistor power supplies. Prerequisite: IEE 231 and 232. Class: 3 hours. Credit: 3 semester hours.

331—Synthesis of Transistor Amplifiers I. The review and expansion of transistor amplifiers, volt-ampere characteristics, bias circuits and stability, cascaded and feedback amplifiers, frequency response, and amplifier design. Class: 3 hours. Credit: 3 semester hours.

332—Synthesis of Transistor Amplifiers II. A continuation of IEE 336. Class: 3 hours. Credit: 3 semester hours.

336—Transistor Circuit Measurements. The advanced study of the practical operations of basic network analysis, transistor circuit configurations, and desired circuit characteristics. Laboratory: 6 hours. Credit: 3 semester hours.

337—Transistor Circuit Analysis. A continuation of the principles developed in IEE 336. Laboratory: 6 hours. Credit: 3 semester hours.

431—Introductory Microwave Techniques. The introduction to transmission theory, measurements of microwave quantities, microwave propagation, common wave guide components, microwave antennas, and microwave electronic circuits. Class: 3 hours. Credit: 3 semester hours.

432—Telemetering Devices and Analysis. The remote control of devices through the use of microwaves: RPM, liquid level, and gaseous content monitoring. Communication links using telemetering will also be studied. Class: 3 hours. Credit: 3 semester hours.

OFFICE OCCUPATIONS (OO)

131—Business Machines I. Instruction and practice on the 10-key adding machine, the printout and electronic calculator, and the Comptometer. Laboratory: 6 hours. Credit: 3 semester hours.

132—Key Punch. With regards to the IBM 029 and IBM 129, this course will consist of an in-depth study in making program cards and verifying pre-punched cards with concentration on becoming familiar with the keyboard and emphasis on accuracy, as well as speed. Prerequisite: 45 wpm on the typewriter. Laboratory: 4 hours. Credit: 3 semester hours. (A certificate is offered for keypunch upon successful completion of the course.)

135—Business Legal Procedure. Basic business legal procedures and forms. This will include contracts, sales commercial paper, bailments, insurance, agencies, transferring of property; also, visit to Small Claims Court. Class: 3 hours. Credit: 3 semester hours.

136—Clerical Record Keeping. Basic posting of entries, bank reconciliation statements, keeping a company checking account, and how to figure payroll deductions. Laboratory: 3 hours. Credit: 3 semester hours.

137—Partnership and Corporate Accounting. Accounting procedures for a partnership and corporate types of organization. Prerequisite: BDP 131. Class: 3 hours. Credit: 3 semester hours.

138—Payroll Procedures. Instruction on principles and procedures of payroll including concentration on the need for payroll records, computing, and paying wages and salaries, social security benefits and taxes, federal unemployment insurance and taxes, state unemployment compensation and taxes, withholding for income tax purposes, personnel and payroll records and payroll accounting systems. Prerequisite: TM 134. Class: 3 hours. Credit: 3 semester hours.

141—Beginning Typing. Introduction of the touch system on manual machines. Letter forms, tabulations and manuscripts. Class: 3 hours. Laboratory: 3 hours. Credit: 4 semester hours.

142—Intermediate Typing. Continuation of study on manual machines. Skill drives, letters, tabulations and business forms, manuscripts. Prerequisite: OO 141 or two years typing in high school. Class: 3 hours. Laboratory: 3 hours. Credit: 4 semester hours.

143—Beginning Shorthand. Introduction to Gregg Diamond Jubilee Shorthand. Reading, writing, brief forms, previewed dictation to 60 wpm, transcription practice, and introduction to new matter. Spelling, punctuation, and word usage are stressed. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

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144—Intermediate Shorthand. Review lessons, practice dictation, reading and transcription from homework, new matter previewed dictation and transcription at 60 to 100 wpm, and dictation from records and tapes. Prerequisite: OO 143 or two years in high school. Class: 3 hours. Laboratory: 3 hours. Credit: 4 semester hours.

231—Advanced Typing. Continuation of study on electric machines. Pretest, manuscript typing, letters, envelopes, cards, labels, problems in tabulation, business forms, mass mailings, executive typing, legal typing, and post test. Prerequisite: OO 142. Class: 1 hour. Laboratory: 2 hours. Credit: 3 semester hours.

235—Secretarial Office Procedure—General. Course readies student for office work by on-the-job simulation (business letters, report writing, travel arrangements, making appointments). The use of various duplicating machine processes and filing (alphabetic, numeric, and geographic) will be covered. Prerequisite: OO 142. Laboratory: 6 hours. Credit: 3 semester hours.

236—Secretarial Office Procedure—Legal. The study of legal procedures in which the student performs a variety of realistic duties (filing, preparing wills, estates and other legal documents and techniques of legal typewriting). Prerequisite: OO 142. Laboratory: 6 hours. Credit: 3 semester hours.

237—Secretarial Office Procedure—Medical. Introduces the student to the routine of a doctor's office, medical vocabulary, and medical communications. Prerequisite: OO 142. Laboratory: 6 hours. Credit: 3 semester hours.

238—Machine Transcription. Introduces use of machine transcription (Dictaphone) for secretaries. Included are vocabulary builders, grammar and punctuation reviews, and speed typing drills. Prerequisite: OO 142. Laboratory: 3 hours. Credit: 3 semester hours.



Adult Training Programs

Supervisor—Norman E. Lowrey. Instructor I—Jean Caruthers.

Cosmetology

The objective of the program is to prepare persons for the profession of beauty operator or instructor of cosmetology. The course of study is designed to meet the requirements for licensure established by the Texas Cosmetology Commission. These requirements include 1,500 hours of instruction, written application, health certificate and birth certificate. These requirements must be met prior to taking the licensure examination.

A diploma is awarded upon completion of each of these one-year programs.

Recommended Programs of Study

Cosmetology Operator

First Semester	Second Semester
Cos 141—Cosmetology I2-8-4	Cos 145—Cosmetology V2-8-4
Cos 142—Cosmetology II2-8-4	Cos 146—Cosmetology VI2-8-4
Cos 143—Cosmetology III2-8-4	Cos 147—Cosmetology VII2-8-4
Cos 144—Cosmetology IV2-8-4	Cos 148—Cosmetology VIII2-8-4
16	16
Summer Semester	
Cos 1409—Cosmetology IX4-16-4	
Cos 1410—Cosmetology X4-16-4	
	8

Cosmetology Instructor

First Semester	Second Semester
Cos 181—Cosmetology: Instr I5-11-8	Cos 183—Cosmetology: Instr III5-11-8
Cos 182—Cosmetology: Instr II5-11-8	Cos 184—Cosmetology: Instr IV5-11-8
16	16

Industrial Supervision

This adult education program is planned for supervisory personnel employed in business and industry. A supervisory or leadership position in this field is a prerequisite for admission to the program. Content of the program covers the entire range of supervisory responsibilities. Each class meeting is carefully planned to be of maximum usefulness to the student's job assignment.

A person who successfully completes 24 semester hours of industrial supervision or supervisory related courses is awarded a Certificate of Completion in Industrial Supervision. Most of the IS courses are taught only on the Beaumont campus.

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The following 15 semester hours of course work are required for the Certificate of Completion in Industrial Supervision:

- MM 233 — Fundamentals of Supervision
- IS 1312 — Applied Supervision
- IS 1316 — Industrial Safety
- IS 1325 — Industrial Communications I
- IS 1326 — Industrial Communications II

The remaining nine semester hours necessary to receive the Certificate of Completion may include other Industrial Supervision courses, Technical Arts courses, and courses offered in other colleges. However, these electives must be related to the occupational goal of the student.

Marine Construction

Marine Construction is a program designed to prepare workers for entry level employment into the following occupations: Shipfitting; Structural Fitting; Layout, and Marine Pipefitting. The Marine Construction courses also may be used to upgrade workers in apprenticeship and company training programs.

The major course work is offered primarily at the Orange campus. Other courses may be taken at either the main campus or Port Arthur campus. A person entering this program could not expect to complete the program without taking courses at Orange.

A Certificate of Completion in Marine Construction will be awarded upon successful completion of one of the programs of study listed below. The certificate will indicate the emphasis completed and a person could receive a certificate for each emphasis.

Recommended Program of Study

I. Emphasis: Structural and Shipfitting

First Semester	
MC 111—Orientation	1-0-1
MC 131—Shipfitting	0-6-3
Dft 133—Intro to Drafting	1-4-3
Wld 131—Study of Tools, Mat'l & Process	3-0-3
Wld 136—Oper of Weld Tools	0-7-3
TM 131—Fund of Math I	3-0-3
JR 231—Job Relations	3-0-3

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Second Semester	
MC 231—Structural Fitting	0-6-3
MC 232—Marine & Structural Layout	0-6-3
MC 233—Marine & Structural Bpr Reading	1-4-3
Wld 235—Metals & Heat Treatment ..	3-0-3
Wld 137—Welding & Cutting	0-7-3
TM 231—Applied Geometry	3-0-3

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II. Emphasis: Marine Pipefitting**First Semester**

MC 111—Orientation	1-0-1
MC 132—Liquid Piping Systems	3-0-3
MC 137—Marine Fire Systems	0-7-3
MC 138—Potable Water Systems	0-7-3
Dft 133—Intro to Drafting	1-4-3
JR 231—Job Relations	3-0-3
TM 131—Fund of Math I	3-0-3

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Second Semester

MC 234—Gaseous Piping Systems	3-0-3
MC 235—Marine Piping Drawings	1-4-3
MC 238—Fuel & Exhaust Systems	0-7-3
MC 239—Air & Steam Systems	0-7-3
Dft 230—Smoley's Fundamentals	3-0-3
RAC 131—Basic Refrigeration Principles	3-0-3

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Plant Maintenance and Operations

This course of study is provided for persons engaged in the maintenance and operations of the various petro-chemical plants in the area.

Objectives of this program are to reinforce the practical work skills developed by the student as a result of his work experience and to insure that he has the necessary skills to maintain a position and fulfill a vital role in area industry.

A person who completes 30 semester hours of Plant Maintenance courses, or approved related courses, is awarded a Certificate of Completion in Plant Maintenance and Operations. Some Plant Maintenance courses are offered at Port Arthur and Orange, but students must enroll in courses on the main campus to complete the program.

COSMETOLOGY (COS)

141—Cosmetology I. Development of personalities, hygienic living, professional ethics and sanitation, safety rules, and state laws on cosmetology. A general orientation to cosmetology including basic fundamentals of skills. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

142—Cosmetology II. Includes shampooing, rinsing, hair and scalp treatments and related theory. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

143—Cosmetology III. Shaping of nails, nail styling and cosmetics that apply, including disorders and diseases of the nails. Practice in manipulative skills of facials, theory of massage and the art of applying make-up and the related theory. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

144—Cosmetology IV. Practice of basic hair shaping technique and the development of practical manipulative skills of cold waving, chemical hair relaxing, hair pressing and thermal waving and curling. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

145—Cosmetology V. The study and practice of creativity in hair styling through development of line and design. Includes combing and arranging. Class: 3 hours. Laboratory: 8 hours. Credit: 4 semester hours.

146—Cosmetology VI. The scientific art of applying hair tints, bleaches and frostings. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

147—Cosmetology VII. Shaping, styling and coloring wigs and hairpieces. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

148—Cosmetology VIII. Advanced techniques in hair shaping including new trend cuts and razor shaping. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

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1409—Cosmetology IX. Beauty salon management, selling principles, preparation of applications and interviews, business records and supplies. Usually taught during a summer session. Class: 4 hours. Laboratory: 16 hours. Credit: 4 semester hours.

1410—Cosmetology X. The development of all skills to speed requirements and proficiency of profession. Review of theory and preparation for examination by the Texas Cosmetology Commission. Usually taught during a summer session. Class: 4 hours. Laboratory: 16 hours. Credit: 4 semester hours.

181—Cosmetology: Instructor I. A program to develop methods and techniques of teaching skills; including orientation and the theory of teaching. Basic unit planning and daily lesson plan development. Prerequisite: Cosmetology Operator License. Class: 5 hours. Laboratory: 11 hours. Credit: 8 semester hours.

182—Cosmetology: Instructor II. A program to develop practical clinic management techniques, to include supervision of student skills in classroom. Prerequisite: Cosmetology Operator License. Class: 5 hours. Laboratory: 11 hours. Credit: 8 semester hours.

183—Cosmetology: Instructor III. A program to develop methods and techniques of teaching informational theory relative to cosmetology. Prerequisite: Cosmetology Operator License. Class: 5 hours. Laboratory: 11 hours. Credit: 8 semester hours.

184—Instructor IV. A program to prepare students for passing the Texas Cosmetology Commission Examination for Cosmetology Instructor's License. Prerequisite: Cosmetology Operator License. Class: 5 hours. Laboratory: 11 hours. Credit: 8 semester hours.

INDUSTRIAL SUPERVISION (IS)

1312—Applied Supervision. A continuation of MM 233 with a study of methods of applying psychology to the handling of men; the use of testing methods, consideration of such factors as morale, group attitudes, motivation, frustration and fatigue; and application of psychological studies to human behavior on the job. Prerequisite: MM 233. Class: 3 hours. Credit: 3 semester hours.

1313—Critical Path Scheduling. A study of the mechanics of the CPM and PERT method and their specific applications to business and industry. How to introduce CPM into a company and setting up the procedures necessary to adapt it to various types of organizations. Class: 3 hours. Credit: 3 semester hours.

1315—Cost Reduction. Methods of carrying out a comprehensive continuing cost reduction and control program including how to get all levels of supervisory management participation in the cost reduction effort and to include cost control as an integral part of the supervisor's total job. Class: 3 hours. Credit: 3 semester hours.

1316—Industrial Safety. Loss control, cause and costs of accidents, the function of safety inspections, the elimination of specific hazards, fire prevention, investigation of accidents and methods for minimizing their frequency and severity will be topics of study in this course. These topics will be explored in relation to the recently enacted Occupational Safety and Health Act. Class: 3 hours. Credit: 3 semester hours.

1322—Labor Relations and Legislation. Company policy, labor history, legislation and labor unions, the labor contract, grievances and arbitration are included in this course. Class: 3 hours. Credit: 3 semester hours.

1325—Industrial Communications I. Basic information and techniques for effectively communicating with employees, management, customers and the public. Some of the topics covered in the course are logical and creative thinking, making a speech, dictating, and telephoning. Class: 3 hours. Credit: 3 semester hours.

1326—Industrial Communications II. Basic information and techniques for effectively communicating with employees, management, customers and the public through letter and report writing. Class: 3 hours. Credit: 3 semester hours.

MARINE CONSTRUCTION (MC)

111—Orientation. A history of the development of shipbuilding and marine structures for the exploration and production of oil. Organization of the shipyard and related industries. Class: 1 hour. Credit: 1 semester hour.

131—Shipfitting. A problem lab in shipfitting designed to provide the student with exercises similar to those that a shipfitter would normally encounter and respond to in the routine performance of his duties. Laboratory: 6 hours. Credit: 3 semester hours.

132—Liquid Piping Systems. A study of the piping schemes used in ship construction for potable water, sanitary and fire fighting systems. Class: 3 hours. Credit: 3 semester hours.

137—Marine Fire Systems. The design and layout of water, steam and chemical fire fighting systems will be studied in this course. Laboratory: 7 hours. Credit: 3 semester hours.

138—Potable Water System. A study of the system of piping used in the conveyance and protection of the water used for human consumption in the marine installation. Laboratory: 7 hours. Credit: 3 semester hours.

231—Structural Fitting. A problems lab in structural fitting designed to provide the student with problem exercises similar to those that a structural fitter would normally encounter and respond to in the routine performance of his duties. Laboratory: 6 hours. Credit: 3 semester hours.

232—Marine and Structural Layout. Layout problems lab designed to provide the student with problem exercises similar to those that a layerout would normally encounter and respond to in the routine performance of his duties. Laboratory: 6 hours. Credit: 3 semester hours.

233—Marine and Structural Blueprint Reading. A study of the engineering drawings and specifications used in the fabrication and erection of structural members used in buildings, spans, drilling and production platforms, barges and ships. Class: 1 hour. Laboratory: 4 hours. Credit: 3 semester hours.

234—Gaseous Piping Systems. A study of fuel exhaust, compressed air and steam systems. Class: 3 hours. Credit: 3 semester hours.

235—Marine Piping Drawings. A study of piping symbols, schematics, shop fabrication drawings, specifications and the take-off of materials from these drawings. Class: 1 hour. Laboratory: 4 hours. Credit: 3 semester hours.

238—Fuel and Exhaust Systems. Problems associated with the layout and installation of systems that provide fuel for engine room, galley, and heating equipment. Laboratory: 7 hours. Credit: 3 semester hours.

239—Air and Steam Systems. Problems associated with the layout and installation of compressed air to shop and engine room equipment and the steam system used for heating purposes. Laboratory: 7 hours. Credit: 3 semester hours.

PLANT MAINTENANCE AND OPERATIONS (PM)

1311—Compressors. The application, operation and maintenance of air and gas compressors, proper installation and power requirements. Class: 3 hours. Credit: 3 semester hours.

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1312—Pumps. The application, care and operation of centrifugal rotary and reciprocating pumps and the study of direct and belt drives. Class: 3 hours. Credit: 3 semester hours.

1313—Pipefitting. Methods of fabricating pipe are studied. The use of layout tools, full-scale layout methods and practices, layout of miters and saddles and the use of the steel square in pipe layout is stressed. Class: 3 hours. Credit: 3 semester hours.

1314—Instrument Piping. A study of the piping required for pressure, flow and temperature controllers both transmitting and recording. Class: 3 hours. Credit: 3 semester hours.

1315—Pneumatic Instruments. A study of the physical and chemical laws affecting pressure and temperature measuring and recording instruments. The operation and application of instruments for controlling manufacturing processes is covered. Class: 3 hours. Credit: 3 semester hours.

1316—Control Systems. The basic control theory and methods for obtaining various control effects are studied. Practical industrial installations of control systems, controller adjustments and checking and testing procedures are stressed. Class: 3 hours. Credit: 3 semester hours.

1317—Electronic Instruments. A review of basic electricity including components and basic laws. A study is made of electron tubes, elementary electronic circuits, and some of the more generally used electronic instrument circuits. Class: 3 hours. Credit: 3 semester hours.

1318—Related Physics. A study of matter, energy, mechanics, heat and basic electrical principles as they relate to the refining and chemical processes. Class: 3 hours. Credit: 3 semester hours.

1319—Related Chemistry. A study of organic and inorganic chemistry, the safety consideration in the handling of chemicals and the physical properties of organic homologs. Class: 3 hours. Credit: 3 semester hours.

1320—Unit Operations. This course will include an investigation of fluid flow and transport, distillation, evaporation, extraction and other unit functions. Class: 3 hours. Credit: 3 semester hours.

1321—Blueprint Reading. A study of lines, views, symbols and dimensions involved in reading blueprint and shop sketches. Practice in making freehand sketches of simple objects. Class: 3 hours. Credit: 3 semester hours.

1322—Structural Blueprint Reading. A study of the various engineering drawings and specifications used in the fabrication and erection of structural steel members. Class: 3 hours. Credit: 3 semester hours.

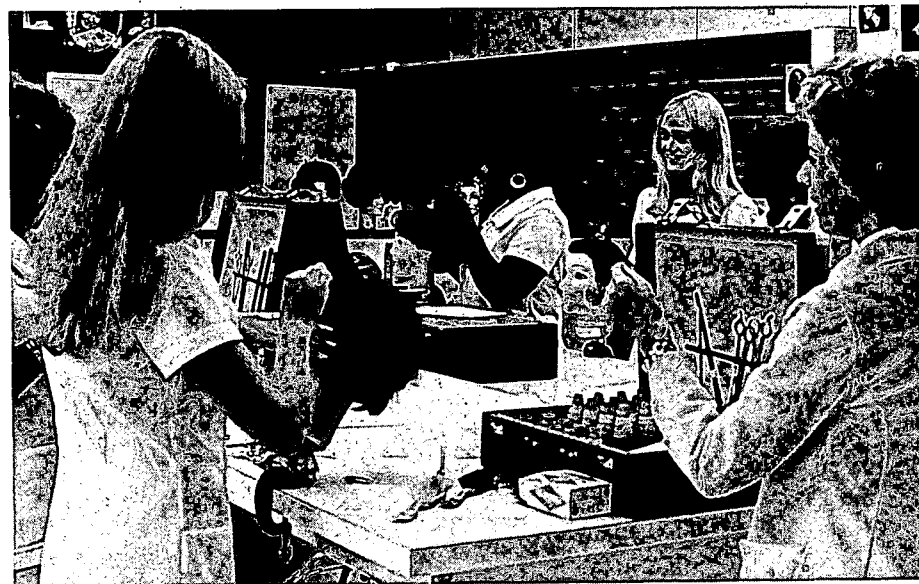
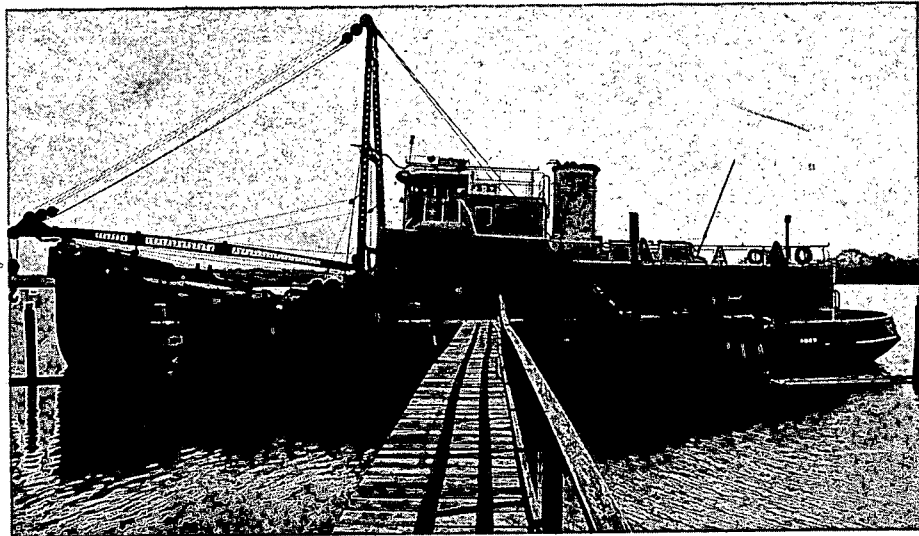
1323—Electrical Blueprint Reading. This course includes a study of the provisions of the National Electrical Code and its application to electrical installations. Block diagrams and schematics of industrial controls, power plants, distribution systems and motor controls also will be studied. Class: 3 hours. Credit: 3 semester hours.

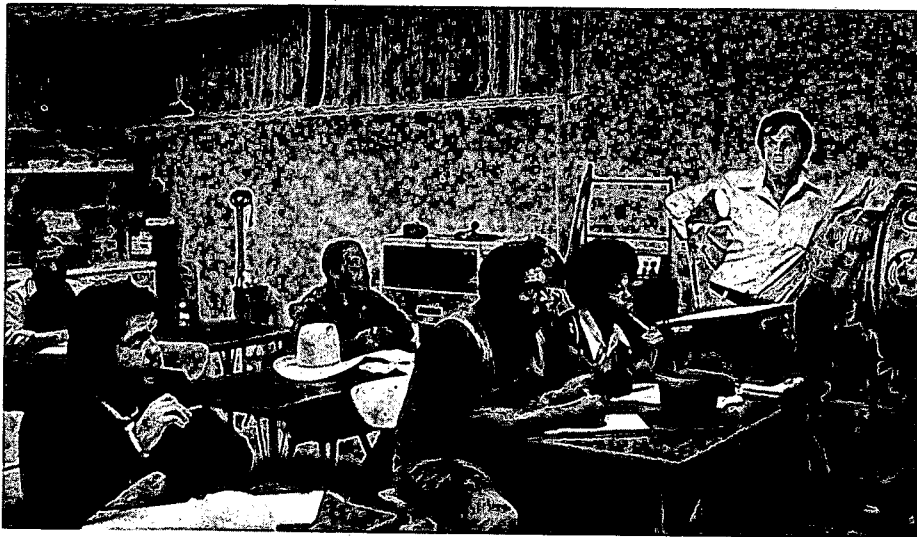
1324—Blueprint Reading for Pipefitters. An introduction to piping drawings, symbols and schematics. Shop fabrication drawings, specifications and material take-off also will be covered in the course. Class: 3 hours. Credit: 3 semester hours.

1325—Water Plant Operations. The source and chemistry of water and the operation of equipment necessary to make it suitable for human and/or industrial consumption will be studied in this course. Class: 3 hours. Credit: 3 semester hours.

1326—Electrical Generation. Study of the operation and maintenance of electrical generators and the drive mechanisms utilized in industrial and public utility applications. Class: 3 hours. Credit: 3 semester hours.

1327—Boiler Operation. Start-up and shut-down procedures, routine operation, boiler instrumentation, fueling and water requirements of the boiler and auxiliary equipment are topics to be discussed in this course. Class: 3 hours. Credit: 3 semester hours.





Continuing Education

Director—Joseph Reho. *Coordinators*—Jack Hill, James D. Spencer. *Instructors*—Mrs. Don E. Horton, Patricio Simon.

CONTINUING EDUCATION

Continuing Education has specific reference to education and training programs designed to serve interests and needs of an adult population. The program accepts adults of all levels of academic achievement. It seeks to provide participants with information and experiences that are useful in helping them solve their problems and achieve their educational and occupational objectives.

Lamar University offers informal non-credit courses for adults in a variety of subjects designed to meet educational needs not readily met by conventional educational programs.

Courses generally are offered during the evening hours as a convenience to the participants. Course length varies according to the subject matter and instructional objectives. Facilities for training may be provided by the University, or arrangements may be made to conduct training at a plant site or other location convenient for persons involved.

Adults who are not high school graduates may attend classes along with those who hold advanced degrees. The only admission requirement is a genuine desire to learn. Because these classes are a community service function, fees are minimal.

Non-credit continuing education at Lamar University consists of conferences, institutes, seminars, workshops, short courses and special training courses. The instructional staff is chosen from leaders in local business and industry, Lamar University's faculty, and other educational institutions. The function of the Office of Continuing Education is to provide the organizational and administrative services necessary to offer these courses.

Courses are offered upon request of a number of individuals, organizations or industry training directors, and may be designed to meet specific needs of persons requesting such instructional programs.

The Office of Continuing Education offers (in cooperation with the College of Technical Arts) the following occupationally oriented programs:

CONFERENCES AND WORKSHOPS

Conferences and workshops usually are less than a week in length and provide in-service training to employees. Conferences are designed to cover many topics concerned with a central theme. Workshops usually emphasize skill training.

Management Conference. This conference is held each Spring to increase the managerial competence of administrators and managers. Outstanding speakers are selected for the conference.

Fireman's Training School. This five-day school is conducted jointly by Lamar University and the Sabine-Neches Chiefs' Association to train firemen, employed by municipal and industrial fire departments, in the latest techniques of fire fighting.

Lunchroom Workshop. A four-day workshop for lunchroom and cafeteria workers, usually conducted in late Summer, designed to improve these workers' performance.

Cummins Diesel Engine Workshop. Representatives of the Cummins Diesel Company conduct this workshop to inform interested persons about the latest improvements made in the company's engines.

Detroit Diesel Engines Workshop. Representatives of the Detroit Diesel Corporation conduct this workshop to inform persons interested in learning about the latest improvements in the various engines manufactured by their company.

Automotive Workshops. This workshop is designed to keep mechanics abreast of the latest developments in the field of automotive repair.

Surveying Workshops. These workshops are offered to satisfy the needs of roadmen, chainmen, instrumentmen, party chiefs and persons preparing to become Registered Public Surveyors. These workshops are conducted in association with Deep East Texas Chapter of the Texas Surveyors' Association.

SHORT COURSES

Short courses are conducted for a specific period of time, usually with a single instructor meeting the class sessions. The goal of most short courses is to offer in-service training at a low cost to the employee.

A short course may be initiated in response to student requests, or when an employer asks for special intensive training for his employees. The content of the course can be designed to meet the specific needs of the students or the employer.

Blueprint Reading. This series of short courses is designed to provide instruction in the reading and interpretation of residential, commercial and industrial construction drawing and specifications preparatory to making construction cost estimates.

Interior Design. Interior design courses consist of a basic course for salesmen, a problems course in interior decoration, and a specialty course in the drawing and presentation of drawings of proposed interior layouts.

Marine Drafting. An advanced drafting course specifically designed for persons interested in marine drafting. Enrollees in this course should have a workable knowledge of the basic drafting techniques and principles.

Post-Vocational Nursing Training. This course is designed to provide advanced training to practicing LVN's. The topics covered in this course will vary to meet the needs of the students.

Medical Assistants. A series of refresher courses designed to aid those interested in attempting the National Certificate Examination.

Building Maintenance. This series of courses deals with the problems of repairing residential and commercial structures. The topics include plumbing repairs, electrical systems, mechanical repairs and preventive maintenance.

Industrial Safety. Industrial safety is the subject of this short course. Specific topics such as safe work practices, safety clothing and safe attitudes are covered. Supervisors as well as hourly employees benefit from the information presented in this course.

Diesel Engines. Special topics are taught in this advanced course in Diesel Engines repair. The topics include preventive maintenance, tune-up and repair of specific types of engines.

Refrigeration and Air Conditioning. A group of short courses covering subjects ranging from basic refrigeration theory to repair of commercial systems. Automotive air conditioning also is covered in one of the courses.

Machine Shop Practices. Courses taught by experienced instructors are offered in the field of machine shop practices. The content of the courses is adapted to the educational objective of the class.

SPECIAL TRAINING ACTIVITIES

The objective of these activities is to provide training to meet the requirements for certification of licensing by various state agencies and associations. In addition, these courses are intended to meet special training needs of businesses and industries and can be conducted at plant sites. The length of the programs varies from a few weeks to a few years.

Apprenticeship Training. Lamar University offers courses which satisfy the requirements of the various joint apprenticeship committees, the Department of Labor and the Bureau of Apprenticeship and Training as specified in their respective standards. Courses for the following trades are presently offered: Bricklaying, Carpentry, Ironworking and Millwright.

Insurance. Certificate and charter requirements of the various insurance societies are met by these courses.

Nursing Home Administration. Persons preparing to take the State Board of Licensure for Nursing Home Administrators Examination are required to have completed 200 hours of specified course work prior to taking the examination. Completion of these courses will satisfy this requirement.

Transportation. This program is designed to prepare candidates for Certificates of Membership in the American Society of Traffic and Transportation. Shipping and receiving procedures, traffic and classification of freight are examples of topics covered in this program.

Water Works Operation. This program meets the requirements of the Texas State Department of Health for the certification of persons employed in water treatment plants.

Basic Fireman's Training. Persons entering the municipal fire departments are required to satisfactorily complete at least 325 clock hours of instruction in a course prepared by the Texas Commission on Fire Protection. The University, in cooperation with the Beaumont Fire Department, schedules this course from three to four times a year.

OFFICE CAREERS EDUCATION PROGRAMS

This program prepares participants for the following occupations: Clerk I, Clerk II, Clerk-Stenographer, Clerk-Typist and Clerk-Bookkeeping. It is primarily designed for clients of the Texas Rehabilitation Commission; however, enrollment is not limited to these individuals. Students may enroll the first and fifteenth of any month except December. The course ranges in length from six months for the Clerk I to 12 months for the Clerical-Bookkeeping.

WELDING

This program prepares persons for entry level employment in the shipbuilding industry. The course includes 10 weeks of study in basic math, blueprint reading and arc welding procedures. Students may enroll the first and third Monday of any month except December.

DRILLING SCHOOL

Persons interested in the drilling industry may gain entrance to this field as a floor man on the drilling rig upon completion of this six-week course. Classes begin every six weeks.

What Is a Technician?

“Technicians who work with engineers and scientists are among the fastest growing occupational groups in the United States. In recent years, the needs of the Nation’s defense program, added to those of the expanding civilian economy, have greatly intensified the demand not only for engineers and scientists but also for technical workers with less training.

• • •

“Technicians are utilized in virtually every activity where technical know-how is required. One of their largest and best known areas of employment is research, development, and design work. Technicians in this type of activity who have titles such as laboratory technicians, physical science aide, or engineering aide generally serve as direct supporting personnel to engineers or scientists. They conduct laboratory experiments or tests; setup, calibrate, and operate instruments; and make calculations. They may work on the fabrication and assembly of experimental equipment and development of models, do drafting and in some instances do design work.

“Technicians in jobs related to production usually follow a course laid out by the engineer or scientist, but they often work without close supervision. They may aid in the various phases of the production planning, such as working out specifications regarding materials and methods of manufacture. Sometimes technicians serve as production supervisors or inspectors, perform tests to insure quality control of products, or make motion and time studies designed to improve the efficiency of operations. They may also perform liaison work between departments such as research or engineering and production.

“In the installation, operation, and maintenance of complex machinery and equipment, technicians often handle or supervise work that might otherwise have to be done by engineers.

“Technicians may also be employed as supervisors of construction projects, as technical representatives of manufacturers seeking to aid the customer in achieving maximum utilization of technical products, or as technical writers of specifications and manuals.”*

**Employment Outlook for Technicians. A Report Prepared by the Veterans Administration in Cooperation with the United States Department of Labor, March 1958, pp. 1-2.*

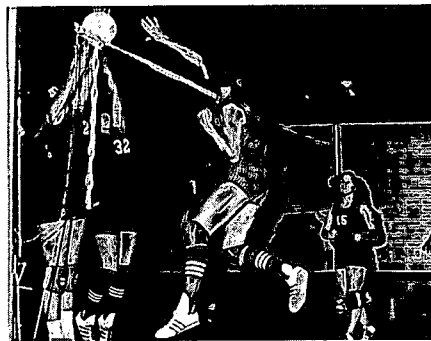
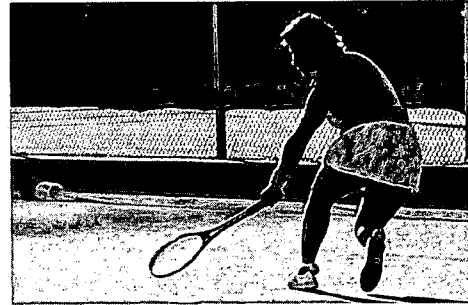
**DIRECTORY FOR CORRESPONDENCE
COLLEGE OF TECHNICAL ARTS**

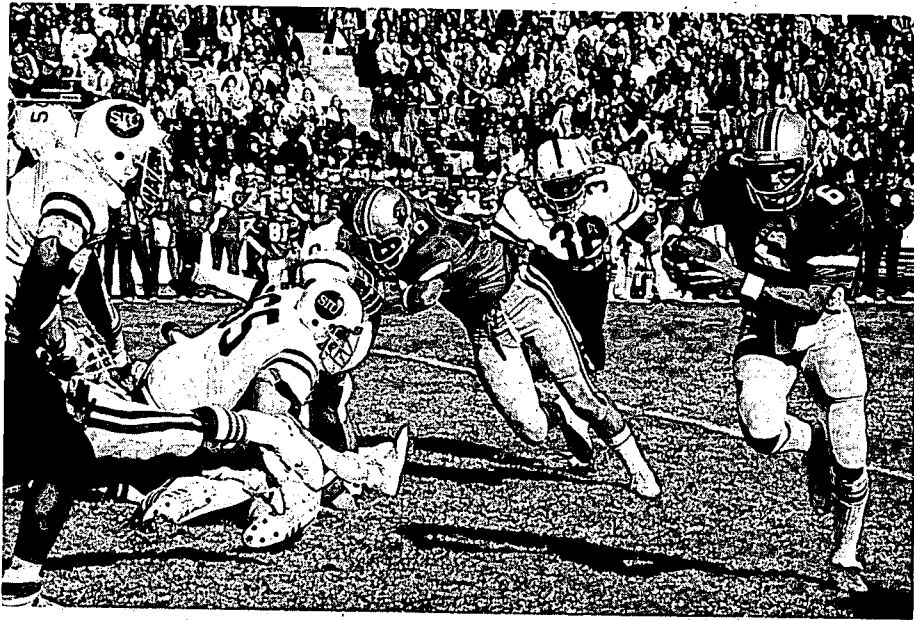
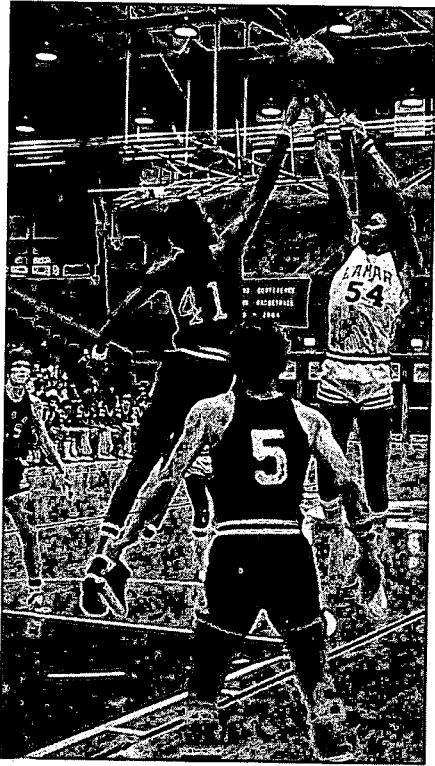
Information concerning the College of Technical Arts may be obtained by calling the Dean's office, 838-8321. All mail should be addressed to Box 10043, Lamar University Station, Beaumont, Texas 77710.

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 Technical Department Robert J. Lawrence, Head
 Office Careers Mrs. Don E. Horton, Coordinator
 Vocational-Technical Continuing Education James D. Spencer, Coordinator
 Real Estate Alice W. Cater, Coordinator

The following persons or agencies are available to serve students enrolled in the College of Technical Arts.

President John E. Gray, Box 10001
 Financial Affairs Oscar K. Baxley, Comptroller, Box 10003
 Administration Andrew J. Johnson, Vice-President, P.O. Box 10014
 Academic Affairs David D. Geddes, Vice-President, Box 10002
 Student Affairs George E. McLaughlin, Jr., Dean, Box 10006
 Admissions and Records Norris H. Kelton, Dean, Box 10009
 Books/Supplies Pete Plotts, Bookstore Manager, Box 10019
 Financial Aid/Awards Jess R. Davis, Director, Box 10042
 Testing/Placement Joe B. Thrash, Director, Box 10012
 Veterans' Affairs Director, P.O. Box 10017
 Information/Publications Russell DeVillier, Director, Box 10011
 Student Health Mable Lomote, R.N., Director, Box 10015
 University Police Eugene W. Carpenter, Director, Box 10013
 Student Housing Bruce E. Stracener, Director, Box 10041
 Library Services R. Blaine Thomas, Director, Box 10021
 Continuing Education Joseph D. Reho, Director, Box 10008
 L.U. at Orange J.B. Welch, Director, 410 Front St.,
 Orange, Texas 77630
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 Port Arthur, Texas 77640











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