LAMAR UNIVERSITY

Beaumont, Texas

College of Technical Arts 1973-74 Bulletin

Lamar University

1973-74 College of Technical Arts Bulletin

VOL. 23 NO. 6 MARCH 1973

NINETEENTH ANNUAL CATALOG ISSUE

With Announcements for 1973-74

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.

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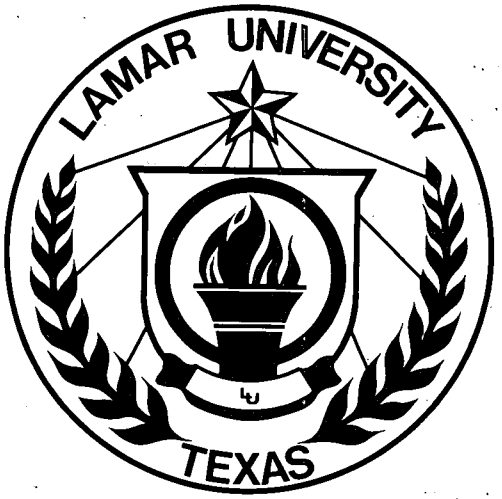
LAMAR UNIVERSITY
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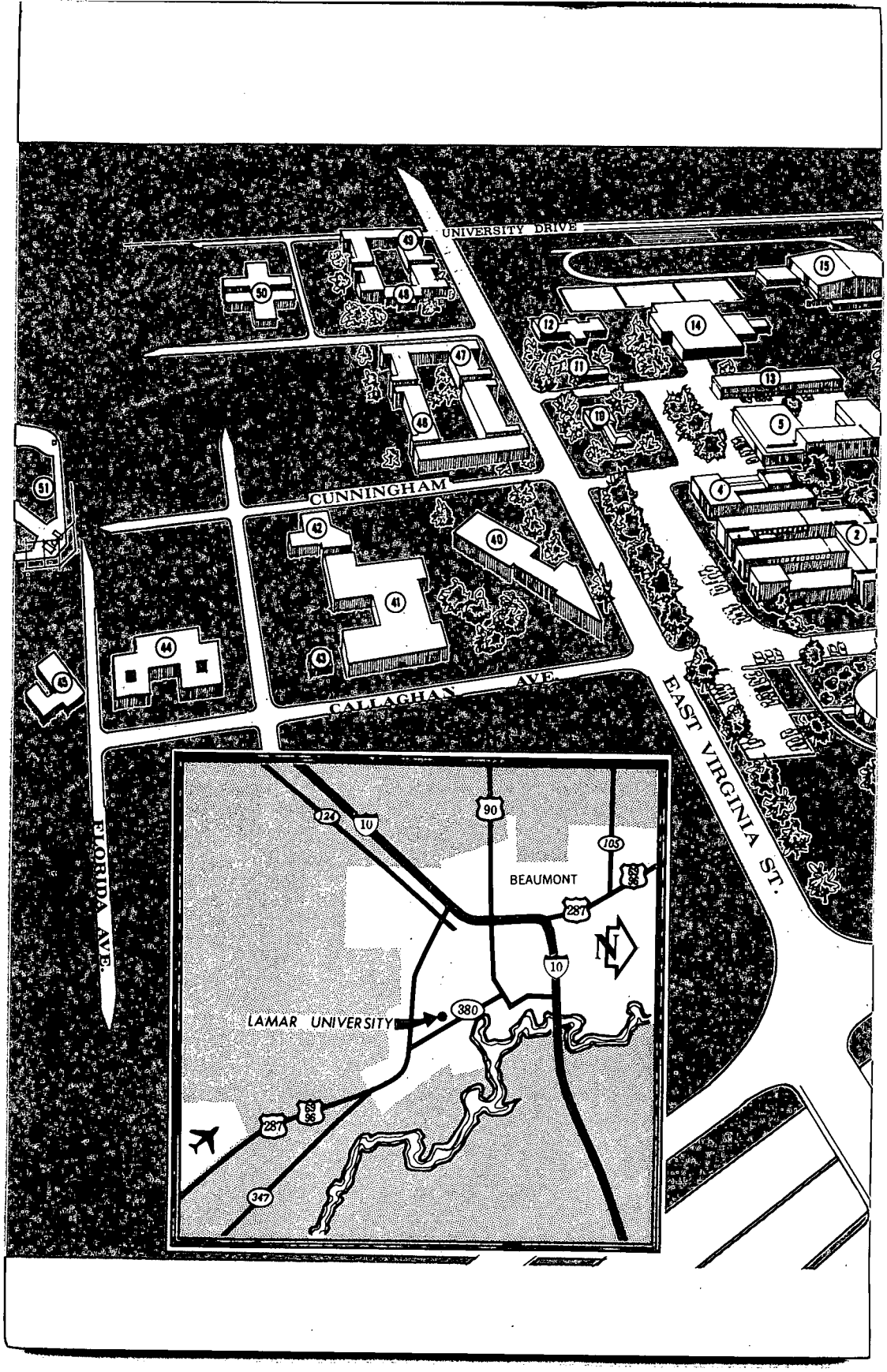
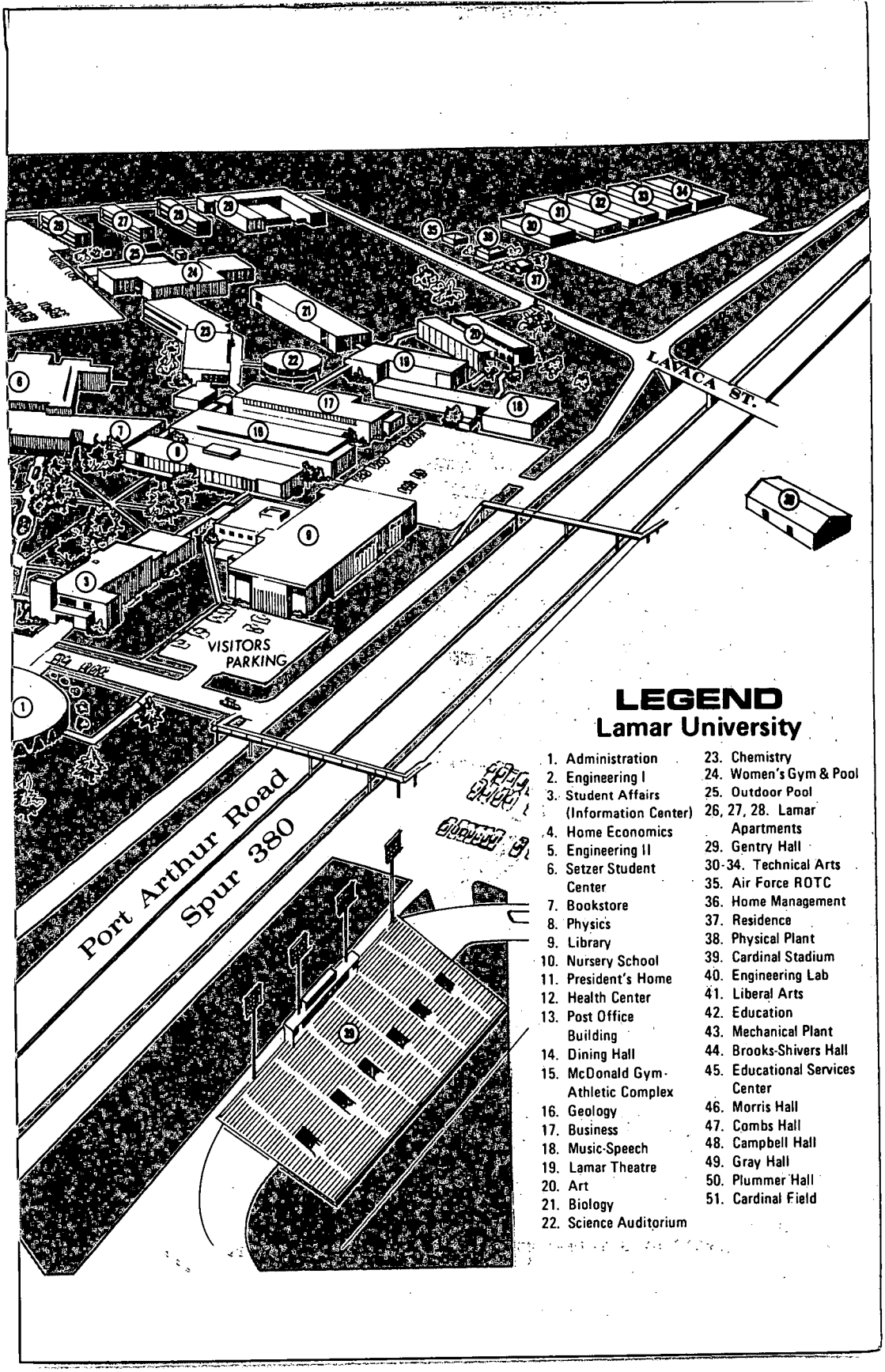

UNIVERSITY DRIVE
CUNNINGHAM
CALLAGHAN AVE.
EAST VIRGINIA ST.
FLORIDA AVE.
BEAUMONT
LAMAR UNIVERSITY
10
90
105
287
380
347
124



LEGEND
Lamar University

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4. Home Economics
5. Engineering II
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7. Bookstore
8. Physics
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11. President's Home
12. Health Center
13. Post Office Building
14. Dining Hall
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20. Art
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23. Chemistry
24. Women's Gym & Pool
25. Outdoor Pool
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35. Air Force ROTC
36. Home Management
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42. Education
43. Mechanical Plant
44. Brooks-Shivers Hall
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46. Morris Hall
47. Combs Hall
48. Campbell Hall
49. Gray Hall
50. Plummer Hall
51. Cardinal Field

1973-74 Calendar

FALL SEMESTER

AUGUST 1973

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	

28 Faculty Meetings.
Dormitories open.

29 Dining halls open.
Registration of students who have completed entrance procedures.

30-31 Continued registration.

Registration after this date limited to available classes.	Late registration (penalty fee charged). Payment of fees is part of registration.

SEPTEMBER

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						

4 Classes begin, 8 a.m. No Adds/Drops on first class day.

5 Second day of classes: Adds/Drops.

6 Last date for registration or for adding courses.

17 General Convocation, 9-11 a.m.

20 Twelfth class day.
Period of application for December graduation begins.

OCTOBER

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			

22-26 Mid-semester week.

30 Mid-semester grades due in Office of Admissions and Records.

NOVEMBER

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	

5 Pre-registration begins.

9 Last date for dropping courses or for withdrawing without penalty.

20 Last date for approval for December graduation.

21 End—Pre-registration program.
Dining halls close.
Dormitories close.
Thanksgiving holidays begin, 10 p.m.

25 Dormitories open, 12 noon.

26 Dining halls open.
Classes resume, 8 a.m.

DECEMBER

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					

7 Last date for dropping courses or for withdrawing.
13-20 Final examinations.
21 All grades in by 4 p.m.
22 Commencement exercises.

SPRING SEMESTER

JANUARY 1974

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		

8 General Faculty Meetings.
Dormitories open.
9 Dining halls open.
Registration of students who have completed entrance procedures.
10-11 Continued registration.

Registration after this date limited to available classes.

Late registration (penalty fee charged). Payment of fees is part of registration.

14 Classes begin, 8 a.m. No Adds/Drops on first class day.
16 Last date for registration or for adding courses.
29 Twelfth class day.
31 Period of application for May graduation begins.

MARCH

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						

4-8 Mid-semester week.
13 Mid-semester grades due in Office of Admissions and Records.
22 Last date for dropping courses or for withdrawing without penalty.
25 Pre-registration begins.

APRIL

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				

5 End—Pre-registration program.
Last date for approval for May graduation.
Dining halls close.
Dormitories close.
Spring holidays begin, 10 p.m.
14 Dormitories open, 12 noon.
15 Classes resume, 8 a.m.
Dining halls open.

MAY

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 Period of application for August graduation begins.
3 Last date for dropping courses or for withdrawing.
8-17 Final examinations.
18 Commencement exercises.

SUMMER SESSION

FIRST TERM

JUNE

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						

2 Limited operation of dormitories.
3 Dining halls open.
Registration.

Registration after this date limited to available classes.	Late registration (penalty fee charged). Payment of fees is part of registration.

4 Classes begin, 8 a.m. No Adds/Drops on first class day.
5 Last date for registration or for adding courses.
7 Fourth class day.
24 Last day for approval for August graduation.
Last date for dropping courses or for withdrawing without penalty.

JULY

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			

4 Independence Day holiday.
8 Last date for dropping courses or for withdrawing.
10 Last Class Day.
12 Term grades due in Office of Admissions and Records.

SECOND TERM

11 Registration.

Registration after this date limited to available classes.	Late registration (penalty fee charged). Payment of fees is part of registration.

12 First Class Day. No Adds/Drops on first class day.
15 Last date to register or to add courses.
17 Fourth class day.

AUGUST

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

7 Last date for dropping courses or for withdrawing without penalty.
12 Last date for dropping courses or for withdrawing.
16 Last Class Day.
Final day for submitting semester grades of graduating seniors to Office of Admissions and Records.
17 Commencement exercises.
Final date for submitting semester grades other than for graduating seniors to Office of Admissions and Records.

Board of Regents

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Bryan Beck, Jr.	Beaumont
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W. S. Monroe	Port Arthur
Pat Peyton, Jr.	Beaumont
J. L. Smith	San Augustine
J. B. Morris, Chairman Emeritus	Beaumont

Directory 1972-73

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ANDREW J. JOHNSON, B.A., M.A., Ph.D., Vice-President for Academic Affairs

H. C. GALLOWAY, JR., B.S., M.Ed., Vice-President for Finance

G. A. WIMBERLY, SR., B.S., Assistant to the President and Personnel Officer

NORRIS H. KELTON, B.A., M.A., Dean of Admissions and Records

OSCAR K. BAXLEY, B.B.A., Business Manager

GEORGE E. McLAUGHLIN, B.S., Dean of Student Affairs

ROBERT BLAINE THOMAS, B.S., M.A., M.S., Ph.D., Director of Library Services

COLLEGES

E. B. BLACKBURN, JR., B.S., M.Ed., Ed.D., Dean, College of Graduate Studies

W. BROCK BRENTLINGER, B.A., M.A., Ph.D., Dean, College of Fine and Applied Arts

LLOYD B. CHERRY, B.S., B.A., M.A., Dean, College of Engineering

EDWIN S. HAYES, B.S., Ph.D., Dean, College of Sciences

J. D. LANDES, B.S., M.S., Ph.D., Dean, College of Business

M. L. McLAUGHLIN, B.S., M.Ed., Ed.D., Dean, College of Education

KENNETH E. SHIPPER, B.S., M.A., Ph.D., Dean, College of Technical Arts

PRESTON B. WILLIAMS, B.A., M.A., Ph.D., Dean, College of Liberal Arts

COLLEGE OF TECHNICAL ARTS

KENNETH E. SHIPPER, B.S., M.S., Ph.D., Dean

GUS A. CARLSEN, I.E., Assistant Dean

HARRY L. WILLIAMS, B.B.A., M.Ed., Vocational Counselor

MRS. WILLA V. NEWTON, Senior Secretary

MRS. JOANNE F. HIGGS, Secretary

1972-73 Faculty

MRS. NINA ADKINS, Instructor I of Vocational Nursing, 1970
B.S.N., University of New Mexico
Registered Nurse, State of Texas

MRS. NORMA M. AYCOCK, Instructor II of Vocational Nursing, 1962, 1970
Registered Nurse, State of Texas

DOYLE BICE, Instructor I of Diesel Mechanics, 1969, 1970
A.A.S., Lamar University
Chief Engineer, U. S. Maritime Service

EMMETT S. BLACK, Instructor II of Machine Tools, 1964, 1970

EUGENE G. BROUSSARD, Instructor I of Industrial Electricity and Electronics Technology, 1969, 1970

DAVID K. BRUCE, Instructor II of Police Science, Acting Director of Criminal Justice Program, 1972
B.S., Central Missouri State University
M.S., California State University at San Jose

VICTOR S. BUTTS, Instructor I of Police Science, 1972
B.S., Lamar University

GUS A. CARLSEN, Instructor IV of Machine Tools, Assistant Dean, College of Technical Arts, 1942, 1971
I.E., The University of Texas at Arlington

MARILYN H. CHITWOOD, Instructor I of Radiologic Technology, 1971
R.T.

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

T. J. DAIGLE, Instructor III of Industrial Electricity and Electronics Technology, 1951, 1971
B.S., University of Southwestern Louisiana

MRS. IRIS S. DRODDY, Instructor I of Drafting Technology, 1970

PAUL J. FEELEY, Instructor I of Refrigeration and Air Conditioning Technology, 1972

MRS. CORNIE FLETCHER, Instructor I of Vocational Nursing, 1969, 1970
Registered Nurse, State of Texas

MARCIA L. GREEN, Instructor I of Related Arts, 1972
B.A., Bishop College
M.A., Stephen F. Austin State University

DONALD HART, Instructor II of Drafting Technology, 1969, 1970
B.S., M.Ed., Sam Houston State University

WILLIAM HARTFORD, Instructor III of Job Relations, 1947, 1971

MARVIN H. HOGAN, Instructor I of Industrial Electricity and Electronics Technology, 1970

MRS. DOLORES JONES, Instructor IV of Vocational Nursing, Head, Department of Health Services, 1962, 1971
A.S., Meridian Municipal College
Registered Nurse, State of Texas

MRS. BETTY JORDAN, Instructor I of Vocational Nursing, 1971
Registered Nurse, State of Texas

JOE I. JUAREZ, Instructor II of Basic Communications, Acting Head, Related Arts Department, 1968, 1972
B.F.A., University of Houston
B.S., Lamar University
M.Ed., University of Houston

MRS. ANN KEEN, Instructor II of Vocational Nursing, 1958, 1971
Registered Nurse, State of Texas

NICHOLAS V. LAMPSON, Instructor I of Related Arts, 1971
B.S., 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

SAM LUCIA, Instructor IV of Diesel Mechanics, 1954, 1970

RONALD I. MARBLE, Instructor I of Welding, 1967, 1970
C.C., Lamar University

*BERYL R. McKINNERNEY, Instructor II of Mathematics, Head, Related Arts Department, 1970, 1971
B.S., Tarleton State College
M.S., Lamar University

ALLEN G. MELTON, Instructor II of Business Data Processing, 1967, 1972
B.S., M.S., Lamar University

RALPH K. MOCK, Instructor III of Drafting Technology, 1966, 1971

JERRY B. MOSELEY, Instructor I of Basic Communications, 1969, 1970
B.S., M.Ed., Lamar University

MYRON M. MYRICK, Instructor II of Drafting Technology, 1967, 1971
Certified Engineering Technician

EDWARD L. PARKER, Instructor II of Law Enforcement, 1971
B.S., Lamar University

MRS. LINDA CAROL REYNARD, Instructor I of Dental Hygiene, 1971
B.S., Baylor University

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* on leave

M. PAUL ROY, Instructor III of Machine Tools, Head, Industrial Department, 1963, 1971

MRS. VIRGINIA RUDLOFF, Instructor I of Vocational Nursing, 1970
Registered Nurse, State of Texas

J. C. SHANKLES, Instructor III of Welding, 1952, 1971

KENNETH E. SHIPPER, Dean, College of Technical Arts, 1971
B.S., Sam Houston State University
M.A., Ph.D., The University of Texas

LENOX SIGLER, Instructor II of Industrial Electricity and Electronics Technology 1965, 1970

JAMES H. SMITH, Instructor I of Diesel Mechanics, 1968, 1970
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, Supervisor, Vocational-Technical Continuing Education, 1970
B.S., M.Ed., Texas A&M University

DEANNA K. STAHL, Instructor II of Mathematics, 1972
B.A., M.S., Lamar University

MRS. FAYE N. STONE, Instructor I of Vocational Nursing, 1969, 1970
Registered Nurse, State of Texas

MRS. BERNICE STURROCK, Instructor II of Vocational Nursing, 1963, 1971
Registered Nurse, State of Texas

MRS. EDNA MARY TERRELL, Instructor I of Vocational Nursing, 1968, 1970
Registered Nurse, State of Texas

ELLIS THOMPSON, Instructor III of Refrigeration and Air Conditioning Technology, 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 Technology, 1970
B.S., Lamar University

Part-Time Faculty

F. L. BARGA, Lecturer of Industrial Supervision, 1971

MRS. PEGGY BENTON, Lecturer of Nurse Assistant, 1972
B.S.N., Texas Christian University

HERMAN BLANTON, Lecturer of Real Estate, 1965

WALTER BOLTON, Lecturer of Related Arts, 1971
B.S., William Marsh Rice University
M.S., Lamar University

JAMES N. BROWN, Lecturer and Adjunct Professor of Dental Hygiene, 1971
B.S., Lamar University
D.D.S., The University of Texas

MRS. BARBARA Y. BURRIS, Lecturer of Related Arts, 1971
B.A., Lamar University

OTTIS CRENSHAW, Lecturer of Industrial Electricity and Electronics Technology, 1972

JOHN C. DANNA, Lecturer of Drafting Technology, 1971

GERALDINE DUBOSE, Lecturer of Dental Hygiene, 1972
Registered Dental Hygienist

HORACE EPPERHART, Lecturer of Industrial Electricity and Electronics Technology, 1970

SHERMAN GUYON, Lecturer of Mid-Management, 1969
B.B.A., University of Houston

WILLARD HALL, Lecturer of Real Estate, 1955

LENIS HARVEY, Lecturer of Business Data Processing, 1971

CHARLES N. ISLER, Lecturer of Industrial Supervision, 1972
B.A., M.Ed., University of Pittsburgh

ROBERT A. KIRKLAND, Lecturer of Related Arts, 1971
B.S., Lamar University

LUKE LATINO, JR., Lecturer of Refrigeration and Air Conditioning Technology, 1971
C.C., Lamar University

BOBBY G. MARSHALL, Lecturer of Diesel Mechanics 1971

THOMAS MARTINDALE, Lecturer of Welding, 1971

CALVIN McKAY, Lecturer of Industrial Supervision, 1966
B.S., University of Southwestern Louisiana

ROBERT M. MOSS, Lecturer of Machine Tools, 1971
C.C., Lamar University

WILLIAM C. PETERS, Lecturer of Business Data Processing, 1967

JOHN C. READ, Lecturer of Refrigeration and Air Conditioning Technology, 1972

EDDIE R. SCHROEDER, Lecturer of Real Estate, 1972
B.B.A., North Texas State University
J.D., Baylor University

GEORGE D. SCHULDT, Lecturer of Police Science, 1971
B.S., Lamar University

HYMAN K. TAYLOR, Lecturer of Drafting Technology, 1972

JAMES S. TEMPLE, Lecturer of Machine Tools, 1971
C.C., Lamar University

MAX V. TRENCK, SR., Lecturer of Industrial Supervision, 1952

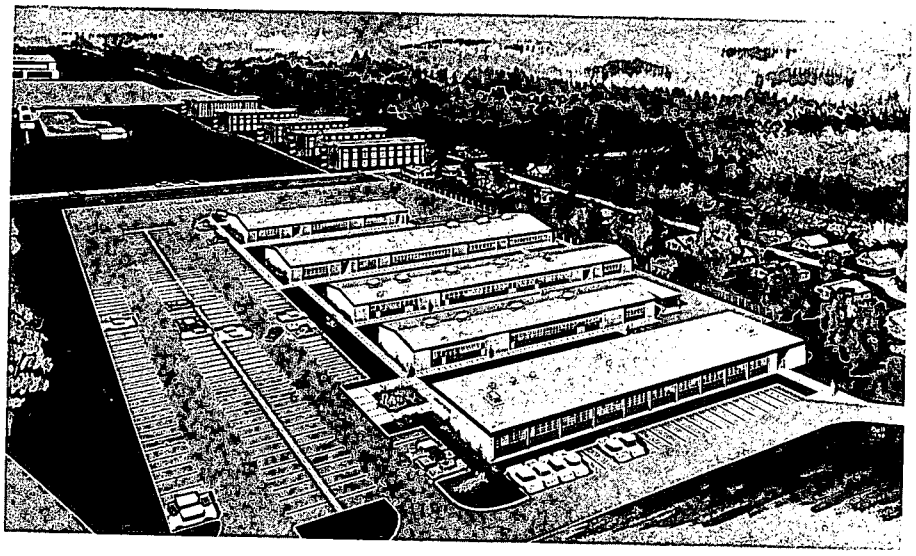
LESLIE WALLEY, Lecturer of Industrial Electricity and Electronics Technology, 1970

JOHN C. WEST, SR., Lecturer of Plant Maintenance, 1969
B.S., Drexel Institute of Technology

JOHN C. WILSON, Lecturer of Refrigeration and Air Conditioning Technology, 1970
B.S., Texas A&M University

MRS. ANITA WOOD, Lecturer of Related Arts, 1971
B.A., Sam Houston State University

LEONARD E. WRIGHT, Lecturer of Refrigeration and Air Conditioning Technology, 1971
C.C., Lamar University



College of Technical Arts

The College of Technical Arts is one of eight colleges at Lamar University and has provided technical and industrial education for thousands of Texas men and women. It is housed in a modern plant with five buildings having more than 80,000 square feet of space. A Bachelor of Science degree in Industrial Technology was authorized for the college in 1972. Modern facilities are provided for instruction in the following associate degree programs: Business Data Processing, Dental Hygiene, Diesel Mechanics, Drafting Technology, Industrial Electricity and Electronics Technology, Machine Tools, Mid-Management, Police Science, Radiologic Technology, Refrigeration and Air Conditioning Technology, and Welding. A Certificate of Completion is offered in Vocational Nursing. Instruction also is offered in the following Adult Training programs: Industrial Supervision, Law Enforcement Training, Nurse Assistant, Plant Maintenance and Operations, and Real Estate.

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 10,000 students, and the curriculum has been expanded and liberalized 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 County, offering first and second year courses, opened in 1969 as an extension center. The branch campus was authorized by the 62nd Texas Legislature. The University also owns the old Sabine Pass Lighthouse and 45.56 acres of surrounding land and 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 degerees in two-year programs. The College still offers Certificates of Completion in programs of less than two years duration.

A four-year Bachelor of Science degree in Industrial Technology degree was of-

fered for the first time in the 1972 Fall Semester. It will provide additional educational opportunities for students in the College of Technical Arts.

GOVERNMENT

The government of the University is vested in a board of nine regents appointed by the Governor and approved by the Senate for terms of six years. The Board of Regents delegates the direction of academic affairs to the President, administrative officers and faculty.

The general policies of the College of Graduate Studies are determined and administered by the Graduate Council.

ACCREDITATION

Lamar is accredited by the Association of Texas Colleges and Universities and the Southern Association of Colleges and Schools. It is approved by the Texas Education Agency and for the training of Veterans under all classifications.

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 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 school are:

1. To provide guidance services that will assist each student in making an appropriate vocational choice.
2. To provide certificate 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 approximate entering dates are June 3, July 11, August 29, and January 9. The current University Calendar contains information regarding registration periods and exact entering dates.

Facilities

BUILDINGS AND GROUNDS

Located on a campus of approximately 200 acres and valued at approximately $40,000,000, the Lamar University plant includes many new and functional buildings of modern design. These structures include:

Administration Building, Art Building, Biology Building, Bookstore, Business Building, Chemistry Buildings, Education Building, Educational Services Center, three Engineering Buildings, Geology Building, Health Center, Home Economics Building, Theatre, Liberal Arts Building, Library, McDonald Gymnasium, Music-Speech Building, Physics Building, Post Office Building, Science Lecture Auditorium, Setzer Student Center, five College of Technical Arts Buildings, Student Affairs Building, University Cafeteria and Women's Gymnasium and Pool.

The Richard W. Setzer Student Center, opened in 1971, represents an investment of $2,800,000 in expansion, renovation and furnishing of the former Student Union Building. Refurbishing of the Student Affairs Building (formerly Liberal Arts) and Engineering Buildings 1 and 2 also has been completed.

On-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. Also, three apartment buildings for upperclassmen and married couples are included in the residence hall system.

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, ROTC Building, Home Management House, Nursery School, and homes for the president and director of the physical plant.

THE LIBRARY

The Lamar Library has developed a strong collection of over 250,000 volumes in support of continuously expanding academic programs. Approximately 25,000 volumes are added annually to the present collection and over 3,000 periodicals are

received. Library resources are further enriched by some 30,000 state and federal documents and microform materials. Additional resources are available to faculty, graduate students and advanced research students through the Library's membership in a statewide teletype network. Construction of a new, multi-story Library is to begin in the Fall of 1973.

HEALTH CENTER

The University maintains a Health Center for the use of students during the long term or summer session.

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. A small fee for drugs, supplies, and special services may be charged students required to remain in the Health Center for more than 10 days.

The Health Center, located on East Virginia St. near Combs Hall, is adequately staffed and equipped for treating 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 guardians 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.

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

Students who are ill should report promptly to the Center for diagnosis and treatment. They will not be treated in the dormitory or in rooming houses.

BOOKSTORE

For the convenience of faculty and students, the University operates a Bookstore 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.

DINING HALLS

A dining hall is located on the main campus (see map on page iv). Dining Halls also are maintained in Brooks-Shivers and Gentry Halls for their residents. Owned by the University, 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 are located in the Setzer Student Center and 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.

HOUSING

Eight dormitories for women and men are located on the campus. The University also owns and operates three apartment buildings for upperclassmen students and married couples. For additional information regarding housing, see the Fees and Expenses section of this Bulletin.

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.

SCHOLARSHIPS

Lamar University offers a scholarship to the highest ranking graduate of each fully accredited high school of Texas. Each scholarship exempts the holder from payment of $50 tuition per semester. Other scholarships supported by industries, organizations, and individuals are available upon application for Technical Arts students. Further information can be obtained from the Student Financial Aids Office.

STUDENTS WITH PHYSICAL HANDICAPS

The State Board of Vocational Education through the Vocational Rehabilitation Division, offers assistance on tuition to students who have certain physical disabilities, provided the vocational objective selected by the disabled persons has been approved by a representative of the Division. Application for Vocational Rehabilitation assistance should be made to the nearest rehabilitation office or to the Director of Vocational Rehabilitation, 612 Littlefield Building, Austin, Texas 78711. The Beaumont office is located in 1110 Goodhue Building.

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 information and aid in planning their university work by consulting the Office of Veterans' Education, Educational Services Building.

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 Aids.

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 $3 per semester and $1.50 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 SERVICE

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.

EXTENDED DAY CLASSES

For administrative purposes, classes offered after 4:45 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.

Admission Requirements

HOW TO APPLY FOR ADMISSION

Students entering the College of Technical Arts may enroll under one of the following plans.

Plan I—All courses will be taken in the College of Technical Arts.

Plan II—Courses may be taken in various Colleges of the University.

All students applying for admission to the College of Technical Arts must complete the following requirements.

1. File an application for admission. (Form attached to back of this catalog.)
2. Take the College Entrance Examination Board's (CEEB) Scholastic Aptitude Test (SAT) or the American College Test (ACT) and designate Lamar University to receive the scores. (November, December, January test dates are preferred.)
3. Submit the official health data form executed by a physician (health form attached to back of this catalog).
4. 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.

Entrance Examination Requirement

Applicants may submit either SAT or ACT scores in fulfillment of the entrance examination requirement. 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 the 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.

Requirements for Admission

All Plan I and Plan II students must complete items listed in the preceding outline on "How to Apply for Admission" and also must meet the following requirements:

Plan I—One of these prerequisites must be met for admission:

1. Graduation from an accredited high school.
2. Transfer with transcript from an accredited post-secondary vocational-technical school.
3. Individual approval from the Dean of Admissions and Records for persons 18 years of age or older who do not meet either of the two preceding requirements.

Adult Training Programs

The following requirements are necessary for admission to Adult Training Programs in which university credit is awarded.

1. A minimum entrance age of 18 years.
2. Employment in trade or industry for which supplementary instruction would increase the skill or knowledge of the worker.
3. File an application for admission to the College of Technical Arts.
4. Have transcript of high school grades sent directly to the Dean of Admissions and Records, Lamar University.
5. Submit the official health data form executed by a physician (health form attached to back of this catalog).
6. The SAT is not required of persons applying for admission to Adult Training Programs.

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.

A student is not registered until all his 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 new electronic processing demands such magnetic ink encoding. 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
Building Use Fee	26
Setzer Student Center Fee	10
Parking Fee (if desired)	10
Health Insurance (if desired)	25
Books and Incidentals (estimated)	55
	$216
	+ lab fees

Part-time Student (Six semester hours):

Tuition	$ 50
Student Services Fee	18
Building Use Fee	13
Setzer Student Center Fee	10
Parking Fee (if desired)	10
Books and Incidentals (estimated)	20
	$121
	+ lab fees

The tuition fee varies with the semester hours carried so that the total may differ from this estimate, according to the schedule shown in the section "Summary of Fees."

*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.

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 (foreign or alien students).

Texas residents taking 12 hours or less pay $50 tuition per semester. Each additional hour is $4 per hour. Tuition for nonresident U.S. citizens is $40 per semester hour. Nonresident U.S. citizens who were enrolled in the Spring 1971 Semester and are maintaining qualifications, will pay the same tuition charges as they paid in that semester. Nonresidents who are citizens of another country pay a minimum of $200 for up to 14 semester hours. Each additional semester hour is $14 per hour.

Each student pays a Student Services Fee of $3 per semester hour, with a maximum of $30 in a long session.

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	Building Use Fee	Setzer Center Fee	Total Charge			
		A	B	C	D				A	B	C	D
Each Fall or Spring Semester	1	$50	$ 40	$ 50	$200	$ 3	$13	$10	$ 76	$ 66	$ 76	$226
	2	50	80	50	200	6	13	10	79	109	79	229
	3	50	120	50	200	9	13	10	82	152	82	232
	4	50	160	66	200	12	13	10	85	195	101	235
	5	50	200	83	200	15	13	10	88	238	121	238
	6	50	240	100	200	18	13	10	91	281	141	241
	7	50	280	117	200	21	13	10	94	324	161	244
	8	50	320	133	200	24	26	10	110	380	193	260
	9	50	360	150	200	27	26	10	113	423	213	263
	10	50	400	167	200	30	26	10	116	466	233	266
	11	50	440	183	200	30	26	10	116	506	249	266
	12	50	480	200	200	30	26	10	116	546	266	266
	13	52	520	200	200	30	26	10	118	586	266	266
	14	56	560	200	200	30	26	10	122	626	266	266
	15	60	600	200	210	30	26	10	126	666	266	276
	16	64	640	200	224	30	26	10	130	706	266	290
	17	68	680	200	238	30	26	10	134	746	266	304
	18	72	720	200	252	30	26	10	138	786	266	318
	19	76	760	200	266	30	26	10	142	826	266	332
	20	80	800	200	280	30	26	10	146	866	266	346
Each Six-Week Summer Session	1	$25	$ 40	$ 50	$100	$ 3	$13	$5	$46	$ 61	$ 71	$121
	2	25	80	50	100	6	13	5	49	104	74	124
	3	25	120	50	100	9	13	5	52	147	77	127
	4	25	160	66	100	12	13	5	55	190	96	130
	5	25	200	83	100	15	13	5	58	233	116	133
	6	25	240	100	100	15	13	5	58	273	133	133
	7	28	280	117	100	15	13	5	61	313	150	133
	8	32	320	133	112	15	13	5	65	353	166	145
	9	36	360	150	126	15	13	5	69	393	183	159
	10	40	400	167	140	15	13	5	73	433	200	173

Code: A, Texas residents; B, nonresidents who are U.S. citizens; C, nonresidents who are U.S. citizens and who were enrolled in the Spring Semester 1971 and are maintaining qualifications; and D, nonresidents who are citizens of another country.

Vocational Nursing Students

Students enrolled in the vocational nursing program are charged a maximum tuition fee of $50. All other fees are the same as for other students.

Laboratory Fees

A laboratory fee of $2 is charged for each semester for all courses in which the combined credit of lecture and laboratory is from one to three semester hours. For such courses in which the credit is four semester hours or more, the laboratory fee is $4 per semester.

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 the time a student is registered. In each instance, a student's parking fee is honored up to the end of Summer Session II.

Registration of an automobile in August is $10. The January fee is $6. A student registering for the first Summer Session is charged $4, and for the second Summer Session the fee is $2. Only one registration is required for one school year.

Health and Accident Insurance

Additional health and accident coverage providing protection over and beyond that given by the Health Center is available at registration for students carrying nine or more semester hours. The fee is $25 (estimated). For their protection and welfare this (or similar) insurance is required of all foreign students.

Special Fees

For courses in which special plans must be prepared and for which specialists must be secured as instructors, fees will be set by the University administration subject to the approval of the president.

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.

Exemption 2—Veterans

Lamar is approved for educational training under all of the Veterans Educational Assistance programs.

Citizens of Texas who served in the Armed Forces in World War I, World War II, the Korean Conflict, or the Vietnam War, and were honorably discharged and who are not eligible for educational benefits provided for veterans of the United States Government are exempt from tuition and laboratory fees, but not from other fees.

To obtain this exemption, the service record, discharge papers, or other necessary papers must be presented at the time of registration. Prior approval is necessary from the Veterans Affairs Office, Educational Services Center.

The above exemption also extends to children 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 the Vietnam War.

Students who expect to attend under some veteran's benefit plan should secure a certificate of eligibility from the Veteran's Administration before registration. The local office of the Veteran's Administration or the Lamar Office of Veteran's Education (Educational Services Center Building) will assist in securing this certification.

Refund of Fees

Any student officially withdrawing will receive a refund on tuition, student service, laboratory 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 refund must be made to the Vice-President of Finance 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

If a check is returned unpaid, the student is automatically suspended from the university. He may re-enter upon redemption of the check plus payment of the returned check fee of $2.

Miscellaneous Fees

Associate Diploma		$4.50
Certificate of Completion		4.50
Bachelor's Diploma		7.50
Cap and Gown Rental		7.00
Late Registration		5.00
Returned Checks		2.00
Re-entry Fee		5.00
Transcript Fee		.50
Advanced Standing Examination	(per course)	5.00
Photo Identification		2.00
Swimming Pools (suits and towels)		2.00

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 or 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.

Student Housing

The student housing program at Lamar is designed to supplement the academic program of instruction. It provides opportunities for social and intellectual development and recreation in a pleasant living environment.

A professional staff is on hand to assist with residence hall programs and to serve as advisors and counselors to students. University residence halls can economically provide the proper atmosphere for out-of-class activities of an educational nature, as well as the proper environment for academic preparation and study.

It is realized that the facilities and programs of Lamar's residence halls will not fulfill the desired life-style of all students. For this reason, students who do not feel that the residence hall program meets their personal needs may elect to find living accommodations off-campus.

The adjustment from high school to college frequently is difficult for the first-year student. Therefore, it is recommended that freshmen who do not live with parents or other relatives reside on the campus. Here they will have ready access to the Library, and 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

Reservations

To reserve a room in the residence halls or an apartment, direct a request to the Housing Office, Lamar University, P.O. Box 10041, Lamar University Station, Beaumont, Texas 77710. *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, dormitories, and rooms. Students may request certain apartments, dormitories, and rooms, and all possible consideration will be given each request. Students already 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 Eng 333). 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. The letter a, b, c, or d following course numbers indicates partial credit in each case; full credit for such numbered courses will be granted only when the series is complete.

Exceptions to the preceding course numbering system occur in the Adult Training Programs where four digits are used to identify courses in these programs.

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.

Admission to Class

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

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 must notify the student prior to this action.

Course Load

Students may carry a load of 18 semester hours or the amount regularly scheduled for each semester of the program being followed. The normal course load for a six-week Summer term is six to eight semester hours.

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 10 weeks (three weeks of a Summer Session) 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 an Associate Dean of Students, 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 is 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.

A grade of "D" is not given in vocational nursing classes. Nursing students should review the Nursing Student Handbook for grading policies.

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 that may not be taken for additional credit, the last grade received is the official grade and is the only one used in figuring GPA.

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.

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. Reports on student work are sent at mid-semester. Upon written request to the Office of Admissions and Records, married students may have grades sent directly to them.

Scholastic Probation and Suspension

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

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.

Degree 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 conditions.
2. Complete an approved degree or certificate plan.
3. Not be on scholastic probation.
4. Maintain a 2.0 grade point average on all work submitted for degree.
5. Complete his final semester's work at Lamar.
6. Make final application for graduation and pay all fees.
7. Attend the official graduation exercise or receive prior written permission from the Dean of the College of Technical Arts to be absent.

BACHELOR OF SCIENCE

1. Remove all admission conditions.
2. Have the following minimums:
   (a) 30 semester hours in residence at Lamar. Twenty-four semester hours of this minimum must be earned during the senior year, except for the special degree programs which apply to biology, law, and medical technology.
   (b) a grade point average of at least 2.0 on all courses in the major field and a grade point average of at least 2.0 on all work required and acceptable to the established degree program.
   (c) 120 semester hours not including required activity courses in health and physical education, marching band, and/or AFROTC.
   (d) a major of 24 semester hours, 12 of which must be in advanced courses.
   (e) six semester hours in Government (231-232).
   (f) six semester hours in United States History (231-232).

(g) six semester hours of freshman English composition.
(h) three semester hours of literature and an additional three semester hours of literature, speech or technical report writing.
(i) four semesters of required physical activity and/or marching band and/or AFROTC.
(j) 30 semester hours in courses on the 300 and 400 levels.
(k) four courses in mathematics or laboratory science, with no more than three courses in math or three in science.

3. A maximum of 66 semester hours from the area of concentration may be counted toward a degree. In the professional programs, the area of concentration is composed of the professional courses (i.e., engineering, art, education, home economics and business). In the non-professional programs, the area of concentration is composed of the combined major and minor.
4. Complete the program of study as listed in the Catalog.
5. No more than a total of 30 semester hours of correspondence and extension credit may be applied to the bachelor's degree. Eighteen semester hours is the maximum for correspondence work only.
6. Make final application for graduation exercises and pay the designated fee.
7. Attend the official graduation exercise or receive prior approval from the Dean of Admissions and Records to be excused from them.

When another bachelor's degree is taken simultaneously, or has been taken previously, the second bachelor's degree may be granted upon completion of all required work for the second degree. A total of 30 semester hours above the number required for the degree having the greater semester hours requirement must be completed.

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 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 from any administrative office takes precedence over all other university activities of the student and should be answered promptly on the day and hour designated. Failure to heed this 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 Probation

A student may be placed on disciplinary probation for unacceptable behavior at any time or place. The Dean of Student Affairs 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 Affairs.

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.*

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.

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.

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 of 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.

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 student is eligible to become a staff member. Those interested are urged to apply.

A Student Handbook is published primarily for the benefit of new students. Information concerning the University and student activities is given in this publication.

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

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

Interface is a quarterly magazine published by students. It accepts copy from all colleges in the University.

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

ARTIST SERIES

The Fine Arts Committee of the Setzer Student Center is made up of students and faculty. The committee annually arranges for the presentation of a number of programs by professional artists and entertainers. Outstanding personalities, musicians, artists and companies have been presented under the sponsorship of the committee.

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 lounges, snack bars, recreation areas, bookstore, ballroom, barbershop, meeting rooms and facilities for student organizations. Offices are located there for Student Government, Setzer Student Center Council, activities program counselors and the Center director.

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 Student Handbook.

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 and 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.

EX-STUDENTS ASSOCIATION

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

College of Technical Arts

ASSOCIATE PROGRAMS

The College of Technical Arts offers career-oriented education in 11 associate degree programs in the four departments in the College. Departments and their programs are:

Industrial Department: Machine Tools, Welding, Diesel Mechanics and Refrigeration and Air Conditioning Technology.

Technical Department: Business Data Processing, Industrial Electricity and Electronics Technology, Drafting Technology and Police Science.

Health Services Department: Dental Hygiene and Radiologic Technology.

Related Arts Department: Mid-Management.

All of the above are two-year programs leading to an Associate of Applied Science degree. They are designed to give the student training prior to his entry into a skilled trade or occupation.

Successful completion of one of these programs should provide the student with sufficient knowledge and skill to enter and advance rapidly in his selected field.

The curriculum of each program is designed to allow a student to enter it in any semester, and is arranged so that the student has two routes by which he may obtain the Associate of Applied Science degree.

Plan I—A student takes courses only in the College of Technical Arts.

Plan II—This plan is recommended if a student wishes to pursue a four-year degree or wishes to take courses in other Colleges in the University.

BACHELOR OF SCIENCE DEGREE

The College of Technical Arts offers a Bachelor of Science degree in Industrial Technology with majors in Drafting Technology and Industrial Electricity and Electronics Technology. Persons pursuing the B. S. degree must be Plan II students.

CERTIFICATE PROGRAMS

In addition to the above degree programs, the College of Technical Arts offers Certificates of Completion in Vocational Nursing and in five Adult Training Programs. Vocational Nursing is a 12-month program and is part of the Health Services Department.

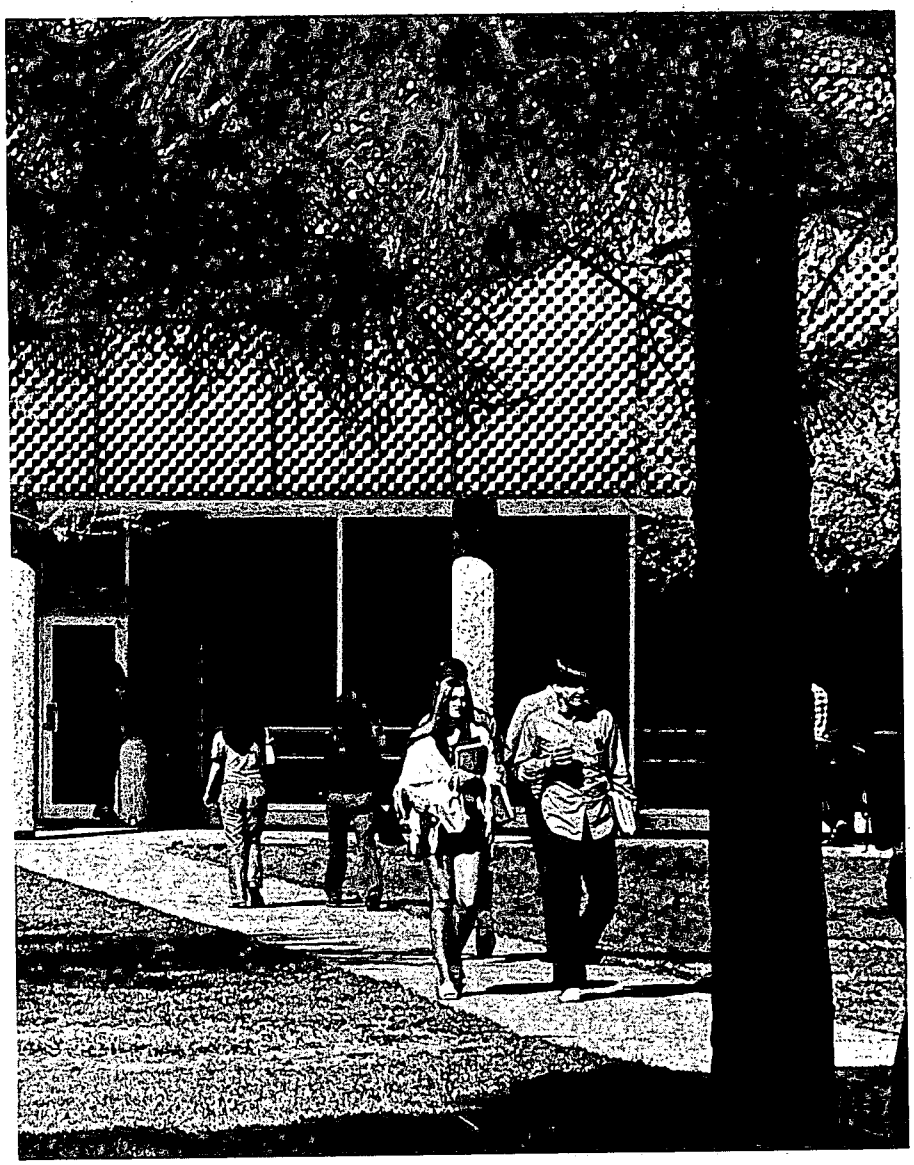
The five Adult Training Programs include, Industrial Supervision, Law Enforcement Training, Nurse Assistant, Plant Maintenance and Operation, and Real Estate.

EXTENDED DAY CLASSES

Extended day classes (4:45 p.m.-10 p.m.) are provided for students who cannot attend the regularly scheduled day classes. While the total time likely will exceed two years, it is possible for a student to complete a degree by carefully selecting courses offered in the extended day schedule.

LAMAR UNIVERSITY AT ORANGE COUNTY

The branch campus at Orange, Texas, offers occupational training in the fields of Drafting Technology and Radiologic Technology. First opened in 1969 as an extension center, LU at Orange County will offer more occupational education as the branch campus develops.



Health Services Department

Degree Programs: Dental Hygiene, Radiologic Technology, Vocational Nursing

Dolores Jones, R.N., Head

DENTAL HYGIENE

Director—James N. Brown, D.D.S. *Instructor*—Linda Reynard.

The objective of this program is to prepare the student for a career in the allied health field of Dental Hygiene. It is designed to develop the basic skills, knowledge and training experience necessary to produce dental hygienists. Each student will be assisted in the pursuit of technical competence by means of lectures, demonstrations, supervised study and practical experience.

Students entering this program are selected by the Dental Hygiene Admission Committee and students are advised to make early application to the program. The Dental Hygiene Aptitude Test is required and students should plan to take this test in November, February or May. Students are required to purchase instruments and uniforms during the first weeks of classes.

Graduates of this two-year instructional program are awarded the Associate of Applied Science degree. It is recommended that students take some of the general education courses (English, Speech, Psychology) during a Summer Session to reduce their course load during the long terms.

PROGRAM OF STUDY

	Lecture Hours	*Lab Hours*	*Semester Hours*
First Semester			
Bio 133—Anatomy & Physiology	3	2	3
Chm 143—Introductory	3	2	4
DH 131—Individual Preventive Dentistry	3	0	3
DH 132—Oral Anatomy & Physiology	2	2	3
DH 141—Dental Hygiene Techniques	2	6	4
DH 121—Pharmacology & Emergency Patient Care	2	0	2
	15	14	19
Second Semester			
Bio 134—Anatomy & Physiology	3	2	3
Bio 245—Introductory Microbiology	3	2	4
Eng—English Composition	3	0	3
DH 123—Radiology	1	3	2
DH 135—General & Oral Pathology	3	0	3
DH 142—Dental Hygiene Clinic I	2	8	4
	15	15	19

Third Semester			
Psy 131—Introduction to Human Behavior	3	0	3
Eng—English Composition	3	0	3
Soc 131—Introduction to Sociology	3	0	3
DH 221—Dental Materials	1	3	2
DH 222—Dental Specialties	2	0	2
DH 223—Oral History & Embryology	2	0	2
DH 241—Dental Hygiene Clinic II	1	12	4
	15	15	19
Fourth Semester			
Spc 131—Speech Communication	3	0	3
Chm 144—Introductory	3	2	4
HEc 138—Principles of Nutrition	3	0	3
DH 226—Dental Health Seminar	2	0	2
DH 225—Community Preventive Dentistry	3	0	3
DH 242—Dental Hygiene Clinic III	2	12	4
	16	14	19

Dental Hygiene (DH)

121—Pharmacology and Emergency Patient Care. Emergency First Aid and safe dental practice, including the study of the uses and action of drugs and anesthetics with emphasis on those used in dentistry. Class: 2 hours. Credit: 2 semester hours.

131—Individual Preventive Dentistry. Introduction to periodontology, patient education factors which contribute to oral health including the accepted methods of preventing cavities and disease. Class: 3 hours. Credit: 3 semester hours.

132—Oral Anatomy & Physiology. Detailed study of the anatomy of the teeth, tissues, and organs of the oral cavity, related structures, innervation and blood supply of the head, and form and function of the teeth. Class: 2 hours. Laboratory: 2 hours. Credit: 3 semester hours.

133—Radiology. The theory and technique of oral radiography, anatomical landmarks, arrangements and care of darkroom equipment, solutions, and proper processing. Class: 1 hour. Laboratory: 4 hours. Credit: 3 semester hours.

135—General and Oral Pathology. A study of periodontology fundamental principles of disease processes. Includes histopathology of the more common diseases affecting the body as well as the pathological conditions of the teeth and their supporting structures. Correlation of histopathological changes and clinical manifestations of oral lesions to the principles of biopsy, handling of biopsy materials, and maintenance of records are included. Class: 3 hours. Credit: 3 semester hours.

141—Dental Hygiene Techniques. Instrumentation and clinical procedures in oral prophylaxis and topical application of fluoride. Lectures, demonstrations, and technique of sterilization, care and use of instruments. Practice on manikins and each other in assimilated clinic to further the understanding of dental practice and emergency care of the patient. Class: 2 hours. Laboratory: 6 hours. Credit: 4 semester hours.

142—Dental Hygiene Clinic I. Applications of principles in clinical practice of dental hygiene. Skills in oral examination, obtaining medical history giving oral prophylaxis, topical applications of fluorides, and patient education are developed. Ethical principles and oral radiography technique is developed with patients. Class: 2 hours. Laboratory: 8 hours. Credit: 4 semester hours.

221—Dental Materials. A general study of the sources, properties, uses and techniques of manipulation of the materials commonly used in dentistry. Skills to be evaluated in laboratory practice. Class: 1 hour. Laboratory: 3 hours. Credit: 2 semester hours.

222—Dental Specialties. Areas of specialization including children, oral surgery, and orthodontics. Guest lecture, demonstrations and clinical observation will assist in establishing a proper perspective of dental hygiene in its relationship to the subdivisions of dentistry. Class: 2 hours. Credit: 2 semester hours.

223—Oral Histology and Embryology. With an introduction and description of general histology and embryology, the chief purpose of this course is to aid the student in the study of the microscopic anatomy of the tissues of the mouth and the embryonic development of the face and oral cavity. The microscopic structures of enamel, dentin, pulp, cementum, periodontal ligament, bone, oral mucosa, epithelial attachment, and salivary glands are described in detail. Class: 2 hours: Credit: 2 semester hours.

226—Dental Health Seminar. The seminar will contain topics of current interest. Included in the course will be dental ethics, office management, office procedures, dental hygiene education, and other topics. Class: 2 hours. Credit: 2 semester hours.

235—Community Preventive Dentistry. A study of personal health habits and traits, and the environmental factors related to these, with special emphasis on he individual's responsibility to the health of the community. A study of the theory, methodology, and application of principles of public health with emphasis on the role of the dentist and dental hygienist in a public health program. Class: 3 hours. Credit: 3 semester hours.

241—Dental Hygiene Clinic II. This course is a continuation of the principles and practice developed in Dental Hygiene Clinic I. With the addition of plague control, preventative programs and supplemental clinic procedures such as polishing amalgam, etc. Class: 1 hour. Laboratory: 12 hours. Credit: 4 semester hours.

242—Dental Hygiene Clinic III. This course is an advanced phase of the principles and practices developed in the Dental Hygiene Clinics I and II. Class: 2 hours. Laboratory: 12 hours. Credit: 4 semester hours.

RADIOLOGIC TECHNOLOGY

Instructor—Marilyn H. Chitwood, R.T.

The objective of this program is to prepare students for careers in the allied health field of Radiologic Technology. Acceptance by one of the affiliate hospitals for clinical laboratory experience is necessary for the completion of the course of study. Each student will be assisted in his pursuit of technical competence by means of lectures, demonstrations, supervised study and practical experience.

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

PROGRAM OF STUDY

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
RA 131—Radiographic Principles I	3	0	3
RA 141—Anatomy and Physiology	3	2	4
RA 142—Radiologic Technology Practicum I	0	25	4
Bio 141—General Biology	3	2	4
Eng—English Composition	3	0	3
	12	29	18
Second Semester			
RA 132—Radiographic Principles II	3	0	3
RA 143—Radiographic Positioning	3	2	4
RA 144—Radiologic Technology Practicum II	0	25	4
Mth 131—Finite Mathematics I	3	0	3
Eng—English Composition	3	0	3
	12	27	17
Summer Session (12 weeks)			
RA 133—Radiologic Technology Practicum III	0	25	3
Third Semester			
RA 241—Special Procedures I	3	2	4
RA 231—Advanced Procedures I	3	0	3
RA 235—Radiographic Physics	3	0	3
RA 242—Radiologic Technology Practicum IV	0	25	4
Psy 131—Introduction to Psychology	3	0	3
	12	27	17

Fourth Semester			
RA 243—Special Procedures II	3	2	4
RA 232—Advanced Procedures II	3	0	3
RA 244—Radiologic Technology Practicum V	0	25	4
Spc 131—Speech Communications	3	0	3
Electives†	3	0	3
	12	27	17
Second Summer Session (12 weeks)			
RA 221—Radiologic Technology Seminar	2	0	2
RA 233—Radiologic Technology Practicum VI	0	25	3
	2	25	5

†By approval.

Radiologic Technology (RT)

131—Radiographic Principles I. Students will become acquainted with the responsibilities of the radiologic technologists and the ethical principles of this profession. Students will be introduced to darkroom chemistry and the technique involved in the production of a radiograph. Nursing procedures pertinent to radiology and the role of the radiologic technologist in various nursing and emergency situations will be studied. The fundamental principles of X-ray will be taught with emphasis on radiation protection. Class: 3 hours. Credit: 3 semester hours.

132—Radiographic Principles II. This course will be devoted to a study of the relationship between milliamperage, kilovoltage, time and distance with density and contrast on a radiograph. A study of basic principles will be made underlying the operation of X-ray equipment and auxiliary devices. Film critique will be included. Class: 3 hours. Credit: 3 semester hours.

133—Radiologic Technology Practicum III. Students will spend 25 hours per week in practical application of the basic principles of radiology. Prerequisite: RA 144. Clinical laboratory: 25 hours. Credit: 3 semester hours.

141—Anatomy and Physiology. This course is designed to give an understanding of functional anatomy and the basic principles of the different systems of the body and their physiological activities. Medical terminology is included in this course. Basic routine positioning is introduced. Topographic anatomy is also included. Class: 3 hours. Laboratory: 8 hours. Credit: 4 semester hours.

142—Radiologic Technology Practicum I. Each student is required to average 25 hours per week in closely supervised practice of basic principles and routine positioning in the clinical area. Co-requisite: RA 131 and 141. Clinical laboratory: 25 hours. Credit: 4 semester hours.

143—Radiographic Positioning. This course is designed to acquaint the student technologist with procedures in radiology. Basic and advanced positioning is included. Contrast media and its relation, reactions, and contraindications is explored. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

144—Radiologic Technology Practicum II. Students will spend 25 hours per week in practice of both common radiographic procedures and specific procedures described in classroom lecture. Radiographic positioning and technique will be emphasized during this time. Film critique will be an integral part of the study. Prerequisite: RA 142. Clinical Laboratory: 25 hours. Credit: 4 semester hours.

221—Radiologic Technology Seminar. This course is designed to prepare the student for the national registry. It consists of a review of all subjects covered in the course of study. Class: 2 hours. Credit: 2 semester hours.

231—Advanced Procedures I. A detailed analysis of radiation protection for the patient and others in the area of exposure. The role and importance of the technologist in pediatric and Intraoral radiography will be covered. Film critique will be continued. Class: 3 hours. Credit: 3 semester hours.

232—Advanced Procedures II. Subjects in this course will include a survey of medical and surgical diseases and their relation to radiography. Student technologist will also be introduced to basic departmental administration and equipment maintenance. Prerequisite: RA 231. Class: 3 hours. Credit: 3 semester hours.

233—Radiologic Technology Practicum VI. The student will complete the clinical application in this course of study with emphasis on job responsibilities and confidence in skill performance. Clinical laboratory: 25 hours. Credit: 3 semester hours.

235—Radiographic Physics. An intensive study of electromagnetism, electric transformers, electrical rectification, production of X-rays and the preventive maintenance of X-ray machines. Prerequisite: RA 131 and 132. Class: 3 hours. Credit: 3 semester hours.

241—Special Procedures I. The course of study will acquaint the student technologist with the highly specialized technical procedures in radiology, and the equipment and opaque media used. Case studies will be used to make qualitative analysis and evaluation of radiographs. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

242—Radiologic Technology Practicum IV. This practicum will further emphasize the practice of specific positioning and manipulation of technique factors. Clinical responsibility will be stressed. Clinical laboratory: 25 hours. Credit: 4 semester hours.

243—Special Procedures II. Included in this course of high specialized procedures is the study of radiation therapy and the use of nuclear medicine and isotopes. Prerequisite: RA 241. Class: 3 hours. Laboratory: 2 hours. Credit: 4 semester hours.

244—Radiologic Technology Practicum V. The student technologist will begin rotation through the nuclear medicine and radiation therapy aspect of the clinical practice. The student will receive additional training in special procedures and emergency situations. Clinical laboratory: 25 hours. Credit: 4 semester hours.

VOCATIONAL NURSING

Director—Dolores Jones. *Instructors*—Nina Adkins, Norma Aycock, Cornie Fletcher, Ann Keen, Virginia Rudloff, Faye Stone, Bernice Sturrock, Edna Mary Terrell.

The objective of this program of study is to prepare the student to obtain employment as a vocational nurse. Upon successful completion of the course, the graduate is eligible to take the examination given by the State Board of Vocational Nurse Examiners to become a Licensed Vocational Nurse (L.V.N.).

Applicants must meet the admission requirements of the College of Technical Arts and be selected by the Vocational Nursing Admission Committee. The applicant must exhibit sufficient maturity to assume the responsibilities required of a nurse, pass a physical examination, have hospitalization insurance, and take the Scholastic Aptitude Test or American College Test.

The curriculum will be divided into two (2) periods: the first 16 weeks will be the pre-clinical phase and the next eight months will be the clinical phase. During the pre-clinical phase, the student will receive primarily nursing theory, with some correlation with hospital experience.

During the clinical phase the student will spend four days a week in the affiliating hospital with one day a week of formal classroom work. Hospital experience includes actual patient care in medical, surgical, obstetrics, pediatrics and other specialized areas in the hospital. Most of the hospital experience will be spent on the day shift, but after the first two months, students may be assigned to evening or night shifts. This duty will be at the discretion of the instructor and hospital supervisor. Students receive a stipend from the hospital during the clinical phase of their training.

Classes begin only in January, May and August, and the nursing courses must be taken in sequence. A grade of "C" or better must be maintained in all nursing courses to advance in the program. A course which has been failed may be repeated once, and failure of a future course will automatically drop the student from the program.

A person who successfully completes this instructional program is awarded a Certificate of Completion.

	Lecture Hours	*Lab Hours*	*Semester Hours*
First Semester			
VN 121—Ethics	2	0	2
VN 122—Nutrition and Diet Therapy	2	0	2
VN 133—Pharmacology	3	0	3
VN 144—Anatomy and Physiology	4	0	4
VN 175—Nursing Skills	2	10	7
	13	10	18
Second Semester			
VN 136—Medical Surgical Nursing I	3	0	3
VN 137—Medical Surgical Nursing II	3	0	3
VN 166—Clinical Practice I	0	16	6
VN 167—Clinical Practice II	0	16	6
	6	32	18

Third Semester			
VN 138—Obstetrical Nursing	3	0	3
VN 139—Pediatric Nursing	3	0	3
VN 168—Clinical Practice III	0	16	6
VN 169—Clinical Practice IV	0	16	6
	6	32	18

Vocational Nursing (VN)

121—Ethics. Personal and vocational adjustments including aspects of community health, disease prevention and mental health. Class: 2 hours. Credit: 2 semester hours.

122—Nutrition and Diet Therapy. This course is designed to acquaint the student with the fundamental principles of basic nutrition, the relationship of food to normal health, and the application of basic principles of nutrition to diet therapy in the treatment of disease. Class: 2 hours. Credit: 2 semester hours.

133—Pharmacology. This course is designed to introduce the student to pharmacology and the administration of medicines. Class: 3 hours. Credit: 3 semester hours.

136—Medical Surgical Nursing I. Specific theory in the disease and conditions of integumentary, special sensory, respiratory, endocrine, muscular, and cardiovascular systems. Class: 3 hours. Credit: 3 semester hours.

137—Medical Surgical Nursing II. Specific theory in the disease and conditions of gastrointestinal, genitourinary, male and female reproductive, nervous, and skeletal systems. Class: 3 hours. Credit: 3 semester hours.

138—Obstetrical Nursing. Specific theory on the care of mothers and new born infants. Class: 3 hours. Credit: 3 semester hours.

139—Pediatric Nursing. Specific theory on the care of sick children. Class: 3 hours. Credit: 3 semester hours.

144—Anatomy and Physiology. The primary objective is to introduce principles of the biological and physical sciences that contribute to the student's understanding of the human body process in normal and certain abnormal conditions. Class: 4 hours. Credit: 4 semester hours.

166—Clinical Practice I. General care of medical patients. Hospital practice. Corequisite: VN 136. Laboratory: 16 hours. Credit: 6 semester hours.

167—Clinical Practice II. General care of surgical patients. Hospital practice. Corequisite VN 137. Laboratory: 16 hours. Credit: 6 semester hours.

168—Clinical Practice III. General care of mothers and new born infants. Hospital practice. Corequisite: VN 138. Laboratory: 16 hours. Credit: 6 semester hours.

169—Clinical Practice IV. General care of sick children. Hospital practice. Corequisite: VN 139. Laboratory: 16 hours. Credit: 6 semester hours.

175—Nursing Skills. The skills designed to prepare the student in the techniques of basic nursing procedures including ability to meet emergencies. The operation of hospital equipment will be taught in this course. Class: 2 hours. Laboratory: 10 hours. Credit: 7 semester hours.

Industrial Department

Degree Programs: Diesel Mechanics, Machine Tools, Refrigeration and Air Conditioning Technology, Welding

M. Paul Roy, Head

DIESEL MECHANICS

Instructors—Sam Lucia, James H. Smith, Doyle R. Bice.

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.

PROGRAM OF STUDY

	Lecture Hours	*Lab Hours*	*Semester Hours*
First Semester			
DM 131—Introduction to Diesel Mechanics	3	0	3
DM 132—Diesel Cycle Application	3	0	3
DM 136—Basic Shop Procedures	0	7	3
DM 137—Precision Instrument Usage	0	7	3
TM 131—Fundamentals of Mathematics I or Mth 131 (Math. Dept.)	3	0	3
BC 131—Basic Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18
Second Semester			
DM 134—Related Systems	3	0	3
DM 135—Maintenance & Repair Problems	3	0	3
DM 138—Tune-up	0	7	3
DM 139—Accessory Servicing	0	7	3
TM 132—Fundamentals of Mathematics II or Mth 132 (Math Dept.)	3	0	3
BC 132—Business Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18

Third Semester

DM 231—Ignition and Combustion Principles	3	0	3
DM 232—Diesel Fuel & Lubrication	3	0	3
DM 236—Troubleshooting & Installation	0	7	3
DM 237—Advanced Diesel Engines Maintenance	0	7	3
TM 231—Applied Geometry	3	0	3
JR 231—Job Relations or Soc 131 (Soc. Dept.)	3	0	3
	12	14	18

Fourth Semester

DM 234—Overhaul Procedures	3	0	3
DM 235—Fuel Injection System	3	0	3
DM 238—Dynamometer Operation & Analysis	0	7	3
DM 239—Diesel Engine Hydraulics	0	7	3
TM 232—Industrial Mathematics	3	0	3
Elective†	3	0	3
	12	14	18

†By Approval

Suggested Technical Arts electives: MM 131, BC 231, BC 232, JR 232, MM 233, MT 133, WLD 133, DFT 133, IEE 133, TM 134, MM 132, MM 133, MM 231, MM 232, MM 236, MM 237.

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 draulics, and terms used in diesel engineering. Prerequisite: DM 231 and 232 or DM 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

Instructors—Gus A. Carlsen, Paul Roy and Emmett L. Black.

Machine Tools is a two-year program designed to train students in the proper use of modern metal-removing machine tools. 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.

PROGRAM OF STUDY

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
MT 131—Intro. to Hand & Machine Tools	3	0	3
MT 132—Fundamentals of Lathe, Shaper & Planer	3	0	3
MT 136—Basic Drill Press & Lathe	0	7	3
MT 137—Bench Tools & Layout	0	7	3
TM 131—Fundamentals of Mathematics I or Math 131 (Math. Dept.)	3	0	3
BC 131—Basic Communication or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18
Second Semester			
MT 134—Milling Machines	3	0	3
MT 135—Introduction to Grinding Machines	3	0	3
MT 138—Milling Processes	0	7	3
MT 139—Milling & Grinding Procedures	0	7	3
TM 132—Fundamentals of Mathematics II or Math 132 (Math Dept.)	3	0	3
BC 132—Basic Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18
Third Semester			
MT 231—Advanced Lathe and Drill Press Detail	3	0	3
MT 232—Applications of Lathe and Drill Press	3	0	3
MT 236—Multi-Machine Projects	0	7	3
MT 237—Gauges & Inspection	0	7	3
TM 231—Applied Geometry	3	0	3
JR 231—Job Relations or Soc 131 (Soc. Dept.)	3	0	3
	12	14	18

Fourth Semester			
MT 234—Advanced Grinding and Milling Techniques	3	0	3
MT 235—Problems in Grinding and Milling	3	0	3
MT 238—Layout & Set-up	0	7	3
MT 239—Machine Design & Maintenance	0	7	3
TM 232—Industrial Mathematics	3	0	3
Elective†	3	0	3
	12	14	18

†By Approval

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

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, shaper, drill press and planer. 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 lathe and its capabilities. Principles and problems of shapers and planers. 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. Laboratory: 6 hours. Credit: 3 semester hours.

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

135—Introduction to Grinding Machines. Grinders of different types, grinding wheels, and heat treatment of steels. 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 Detail. Lathe, drill press and details of layout, setup and operations are extended. Blueprints continued. 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

Instructor—Ellis Thompson.

Refrigeration and Air Conditioning Technology is a program of study designed to produce a refrigeration and air conditioning technician.

Objectives of the program include the development of skills, knowledge and problem solving ability in air conditioning and refrigeration. The graduate is prepared to enter the field of refrigeration or air conditioning as a capable craftsman.

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

PROGRAM OF STUDY

	Lecture Hours	*Lab Hours*	*Semester Hours*
First Semester			
RAC 131—Basic Refrigeration Principles	3	0	3
RAC 132—Basic Electricity and Electrical Devices	3	0	3
RAC 136—Basic Refrigeration	0	7	3
RAC 137—Basic Refrigeration and Service	0	7	3
TM 131—Fundamentals of Mathematics I or Mth 131 (Math. Dept.)	3	0	3
BC 131—Basic Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18
Second Semester			
RAC 134—Refrigeration Theory	3	0	3
RAC 135—Commercial Refrigeration	3	0	3
RAC 138—Basic Electrical Wiring and Testing Procedures	0	7	3
RAC 139—Basic Electrical Wiring and Control Systems	0	7	3
TM 132—Fundamentals of Mathematics II or Mth 132 (Math. Dept.)	3	0	3
BC 132—Business Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18
Third Semester			
RAC 231—Principles of Air Conditioning	3	0	3
RAC 232—Air Conditioning Processes	3	0	3
RAC 236—Installation & Repair of Forced Air Heating & Cooling Systems	0	7	3
RAC 237—Automobile Air Conditioning	0	7	3
TM 231—Applied Geometry	3	0	3
JR 231—Job Relations or Soc 131 (Soc. Dept.)	3	0	3
	12	14	18

Fourth Semester			
RAC 234—Advanced Air Conditioning	3	0	3
RAC 235—Cooling Towers	3	0	3
RAC 238—Advanced Air Conditioning	0	7	3
RAC 239—Heat Pumps	0	7	3
Electives†	6	0	6
	12	14	18

†By Approval

Suggested Technical Arts electives: MM 131, MM 132, MM 133, MM 232, MM 233, BC 231, BC 232, JR 232, DM 133, DFT 133, IEE 133, WLD 133, TM 232.

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 air conditioning, air cycle, properties of air, cooling and heating load estimation. Estimation of air supply. Low voltage controls. Prerequisite: RAC 134 and 135. Class: 3 hours. Credit: 3 semester hours.

232—Air Conditioning Processes. Tracing air conditioning processes on the psychrometric charts, refrigeration for air conditioning, automatic controls for heating, automatic controls for cooling, wiring diagrams, and refrigeration, tubing sizing and installing practices. 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 conditioners, 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—Installation and Repair of Forced Air Heating and Cooling Systems. 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—Automobile Air Conditioning. Service and installation. Cooling towers and pumps. Water piping: threading and installation. Three phase motors, heat pumps, compressor valve plates and shaft seals. Electronic filters and humidifiers. Prerequisite: RAC 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

238—Advanced Air Conditioning. Sizing, installing and checking central air conditioning systems. Use of air meters, velocity meters, changing valve plates, compressor seals, and tracing grounds. Operate and service hermitic compressors, and acidize cooling towers. Prerequisite: RAC 236 and 237. Laboratory: 7 hours. Credit: 3 semester hours.

239—Heat Pumps. Installation, operation, maintenance and repair of gas heating, gas cooling, and heat pumps. Automobile air conditioning and service of water cooled equipment. Calibration of gauges and meters. Use of electronic leak testers and vacuum gauges. Prerequisite: RAC 236 and 237. Laboratory: 7 hours. Credit: 3 semester hours.

WELDING

Instructors—Joel C. Shankles, Carey B. Wesley and Ronald I. Marble.

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.

The objective of the program is to develop the skills in modern welding practices. Safety and proper work habits also are stressed.

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

PROGRAM OF STUDY

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
WLD 131—Study of Tools, Mat'ls & Processes	3	0	3
WLD 132—Principles of Flame Cutting and Arc Welding Equipment	3	0	3
WLD 136—Welding Operations	0	7	3
WLD 137—Welding & Cutting	0	7	3
TM 131—Fundamentals of Mathematics I or Mth. 131 (Math. Dept.)	3	0	3
BC 131—Basic Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18
Second Semester			
WLD 134—Processes Related to Welding	3	0	3
WLD 135—A.C. and D.C. Supplies	3	0	3
WLD 138—Test Qualifications	0	7	3
WLD 139—Welding and Brazing	0	7	3
TM 132—Fundamentals of Mathematics II or Mth. 132 (Math. Dept.)	3	0	3
BC 132—Business Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	12	14	18
Third Semester			
WLD 231—Pipe Welding and Layout	3	0	3
WLD 232—Fundamentals of Inert Gas Welding	3	0	3
WLD 236—Ferrous Metals & Pipe	0	7	3
WLD 237—Layout and Fabrication	0	7	3
TM 231—Applied Geometry	3	0	3
JR 231—Job Relations or Soc 131 (Soc. Dept.)	3	0	3
	12	14	18

Fourth Semester			
WLD 234—Special Welding Application	3	0	3
WLD 235—Intro. to Metallurgy and Heat Treatment	3	0	3
WLD 238—Inert Gas and Non-Ferrous Metal	0	7	3
WLD 239—Adv. Ferrous & Non-Ferrous Welding	0	7	3
TM 232—Industrial Mathematics	3	0	3
Elective†	3	0	3
	12	14	18

†By Approval

Suggested Technical Arts electives: MM 131, MM 132, MM 133, MM232, BC 231, BC 232, JR 232, MM 233, DM 133, DFT 133, IEE 133, MT 133, TM 133, TM 134.

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. Laboratory: 6 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—Pipe Welding and Layout. Continuation of special welding and cutting techniques. Blueprint reading and pipe layout. 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 applications 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—Introduction to Metallurgy and Heat Treatment. Introduction to metallurgy, metal identification, and heat treatment. Procedure and welder qualifications studied. 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 with aluminum and alloys. Continuation of welding ferrous metals and pipe. Safety emphasized. Prerequisite: WLD 136 and 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 Non-Ferrous Metal. Operation of metal inert gas (M.I.G., microwire) on steel plate and pipe. Extensive pipe layout, fabrication and welding. Oxy-acetylene flame cutting and fitting. Prerequisite: WLD 236 and 237 or WLD 138 and 139. Laboratory: 7 hours. Credit: 3 semester hours.

239—Advanced Ferrous and Non-Ferrous Welding. Advanced pipe welding procedures. Extended T.I.G. and M.I.G. welding practice. Development of skills in setup and operation of submerged arc and inner-shield welding equipment. Emphasis on safety and welder qualification testing. Prerequisite: WLD 138 and 139 or WLD 236 and 237. Laboratory: 7 hours. Credit: 3 semester hours.

Related Arts Department

Programs: Mid-Management, Basic Communications, Mathematics, Job Relations

Joe I. Juarez, Acting Head

MID-MANAGEMENT

Instructors—Max Sniffen and Nicholas V. Lampson.

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.

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

PROGRAM OF STUDY

	Lecture Hours	*Lab Hours*	*Semester Hours*
First Semester			
MM 131—Introduction to Business	3	0	3
MM 141—Mid-Management Internship	0	15	4
MM 111—Mid-Management Seminar	1	0	1
BC 131—Basic Communications or Eng. Comp. (Eng. Dept.)	3	0	3
TM 131—Fundamentals of Mathematics I or Mth. 131 (Math. Dept.)	3	0	3
Electives†	3	0	3
	13	15	17
Second Semester			
MM 132—Principles of Economics or Eco. 131 (Economics Dept.)	3	0	3
MM 142—Mid-Management Internship	0	15	4
MM 112—Mid-Management Seminar	1	0	1
BC 132—Business Communications or Eng. Comp. (Eng. Dept.)	3	0	3
TM 134—Business Mathematics or Mth. 134 (Math. Dept.)	3	0	3
Electives†	3	0	3
	13	15	17

Third Semester			
MM 231—Principles of Management	3	0	3
MM 241—Mid-Management Internship	0	15	4
MM 211—Mid-Management Seminar	1	0	1
BDP 131—Elementary Accounting	3	0	3
JR 232—Human Relations or Psy. 131 (Psy. Dept.)	3	0	3
Electives†	3	0	3
	13	15	17
Fourth Semester			
MM 232—Personnel Management	3	0	3
MM 242—Mid-Management Internship	0	15	4
MM 212—Mid-Management Seminar	1	0	1
BC 232—Public Speaking or Spc. 131 (Speech Dept.)	3	0	3
MM 233—Fundamentals of Supervision or BA 331 Business Law (B.A. Dept.)	3	0	3
Electives†	3	0	3
	13	15	17

†By approval

Suggested Technical Arts electives: BDP 132, BDP 141, TM 133, BDP 142, BDP 144, BC 231, MM 235, MM 236, MM 237, MM 133, RES 121, RES 122, RES 221, RES 228.

Suggested Academic electives in other Colleges: SS 123, SS 231, SS 341, BA 332, BA 334.

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—Principles of Economics. Introduction to economic principles, emphasizes monetary theory, fluctuations and growth, public finance, current economic problems, and their effects on business development. Class: 3 hours. Credit: 3 semester hours.

133—Principles of Selling. Precepts of effective selling in the American economy. Sales process; prospecting; presentation; objectives; close. Class: 3 hours. Crdit: 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—Principles of Management. A general theory of management presented within the framework of the traditional managerial functions. A basic course for the study of more advanced and specialized aspects of business administration. Class: 3 hours. Credit: 3 semester hours.

232—Personnel Management. A behavioral approach to the management of human resources in business enterprises. The fundamentals of human relations and organizational behavior will be used to structure an understanding of the managerial problems of recruitment, selection, training, promotion, and termination of personnel. Supervision of the work force will be considered in relation to theories of motivation, communication, and leadership. 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.

235—Principles of Accounting. Special attention is given the financial statements; cash and receivable; fixed assets; pre-paid expenses; liabilities; capital stock and related owners' equity; manufacturing accounting; installment sales; branch accounts. Prerequisite: BPR 131. Class: 3 hours. Credit: 3 semester hours.

236—Business Law. Principles of law which form the legal framework for business activity, applicable statutes, contracts, agency. Class: 3 hours. Credit: 3 semester hours.

237—Retailing. The nature and functions of retailing in the marketing structure. Development; organization; methods; policies of operation; problems. Class: 3 hours. Credit: 3 semester hours.

BASIC COMMUNICATIONS, MATHEMATICS, AND JOB RELATIONS

Instructors—William H. Hartford, Joe I. Juarez, Jerry B. Moseley, Beryl R. McKinnerney, Nicholas V. Lampson, Deanna K. Stahl, Marcia Green.

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.

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.

135—Developmental Reading for University Students. This course is designed to help students improve their reading skills, vocabulary, and study skills. Individualized instruction is provided to help the students achieve these skills. 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.

232—Public Speaking. An analysis of three basic types of public speaking: to inform, to entertain, and to persuade. The student will be given basic instruction in techniques and opportunities to practice these techniques. 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, percent, 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.

134—Business Mathematics. A comprehensive course in basic business mathematics. Presenting work in interest, payrolls, taxes, financial statements, and special problems for the mid-manager. Prerequisite: TM 131 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.

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.

Technical Department

Degree Programs: Business Data Processing, Drafting Technology, Industrial Electricity and Electronics Technology, Police Science

R. J. Lawrence, Head

BUSINESS DATA PROCESSING

Instructors—Allen G. Melton and Lynn M. Clark.

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.

PROGRAM OF STUDY

	Lecture Hours	*Lab Hours*	*Semester Hours*
First Semester			
BDP 131—Elementary Accounting or Acc. 231 (Accounting Dept.)*	3	0	3
BDP 141—Introduction to Business Data Processing	3	2	4
BDP 144—COBOL I	3	2	4
TM 132—Fundamentals of Mathematics II or Mth. 134 (Math. Dept.)*	3	0	3
BC 131—Basic Communications or Eng. Comp. (Eng. Dept.)*†	3	0	3
	15	4	17
Second Semester			
BDP 132—Elementary Cost Accounting or ACC. 232 (Accounting Dept.)*	3	0	3
BDP 143—COMPASS	3	2	4
BDP 142—FORTRAN	3	2	4
TM 133—Mathematics† or Mth. 133 (Math. Dept.)*	3	0	3
BC 132—Business Communication or Eng. Comp. (Eng. Dept.)*†	3	0	3
	15	4	17

Third Semester			
BDP 231—System Design	3	0	3
BDP 232—RPG	3	0	3
BDP 241—COBOL II	3	2	4
BDP 244—Computer Business Applications	3	2	4
Electives†	3	0	3
	15	4	17
Fourth Semester			
BDP 243—Advanced FORTRAN	3	2	4
BDP 244—Operating Systems	3	2	4
BDP 235—Seminar	3	0	3
Electives†	6	0	6
	15	4	17

*Students who take these courses must meet the general admission requirements of the institution.

†By approval.

Suggested Technical Arts electives: JR 231, JR 232, MM 131, MM 132, MM 133, MM 231, MM 232, MM 233, TM 133, TM 134, TM 231, BC 231, BC 232.
Suggested electives in other Colleges: BA 4317, PSY 131, SOC 131, PHL 131, ANT 231, SPC 121, MTH 135, MTH 136.

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.

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.

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: 1 hour. Laboratory: 6 hours. Credit: 4 semester hours.

DRAFTING TECHNOLOGY

Instructors—Ralph K. Mock, Myron M. Myrick, Donald S. Hart, Iris S. Droddy, Tom M. Christian.

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.

PROGRAM OF STUDY

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
DFT 131—Drafting Instruments	3	0	3
DFT 132—Fundamentals of Drafting	3	0	3
DFT 136—Basic Drafting Laboratory I	0	6	3
DFT 137—Basic Drafting Laboratory II	0	6	3
BC 131—Basic Communications or Eng. Comp. (Eng. Dept.)†	3	0	3
TM 132—Fundamentals of Mathematics II or Mth. 134 (Math. Dept.)	3	0	3
	12	12	18
Second Semester			
DFT 134—Architecture Drafting Techniques	3	0	3
DFT 135—Architecture Drafting Techniques	3	0	3
DFT 138—Architectural Drafting Laboratory I	0	6	3
DFT 139—Architectural Drafting Laboratory II	0	6	3
BC 132—Business Communications or Eng. Comp. (Eng. Dept.)†	3	0	3
TM 133—Applied Trigonometry or Mth. 133 Anal. Trig. (Math. Dept.)	3	0	3
	12	12	18
Third Semester			
DFT 231—A.S.M. Standards, Pipe and Fitting Designs	3	0	3
DFT 232—Process Pipe Drafting	3	0	3
DFT 236—Systems Drafting Laboratory I	0	6	3
DFT 237—Systems Drafting Laboratory II	0	6	3
DFT 230—Smoley's Fundamentals	3	0	3
JR 231—Job Relations or Soc 131 (Soc. Dept.)	3	0	3
	12	12	18

Fourth Semester			
DFT 234—A.I.S.C. Specifications and Standards	3	0	3
DFT 235—Structural Design	3	0	3
DFT 238—Structural Design Laboratory I	0	6	3
DFT 239—Structural Design Laboratory II	0	6	3
DFT 233—Application of Smoley's Tables	3	0	3
Elective†	3	0	3
	12	12	18

†By approval

Suggested Technical Arts electives: DFT 261, MM 131, MM 132, MM 133, MM 231, MM 232, MM 233, BC 231, BC 232, JR 232, MT 133, IEE 133, DFT 1311.

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 Techniques. 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 diagrams, 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.

INDUSTRIAL ELECTRICITY AND ELECTRONICS TECHNOLOGY

Instructors—Robert J. Lawrence, Lenox L. Sigler, Tarlton J. Daigle, Marvin H. Hogan, Jerry L. Wilson, Eugene G. Broussard.

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.

PROGRAM OF STUDY

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
IEE 131—Basic Laws and Theories	3	0	3
IEE 132—The Application of Kirchhoff's Laws	3	0	3
IEE 136—Basic Laboratory	0	6	3
IEE 137—Equipment Familiarization	0	6	3
TM 111—Slide Rule	1	0	1
TM 132—Fundamentals of Mathematics II or Mth. 134 (Math. Dept.)	3	0	3
BC 131—Basic Communications or Eng. Comp. (Eng. Dept.)	3	0	3
	13	12	19

Second Semester			
IEE 134—Alternating Voltage and Current Fundamentals	3	0	3
IEE 135—Alternating Current Circuits	3	0	3
IEE 138—Laboratory Analysis	0	6	3
IEE 139—Reactive Experiments	0	6	3
TM 133—Applied Trigonometry or Mth. 133 (Math. Dept.)	3	0	3
BC 132—Business Communications or Eng. Comp. (Eng. Dept)	3	0	3
	12	12	18

Third Semester			
IEE 231—The Theory and Operation of Vacuum Tubes and Associated Circuits	3	0	3
IEE 232—Radio Frequency Circuits as Applied to Receiving Apparatus	3	0	3
IEE 236—Power Supplies	0	6	3
IEE 237—Amplifiers	0	6	3
IEE 230—Electronics Mathematics	3	0	3
JR 231—Job Relations or Soc 131 (Soc. Dept.)	3	0	3
	12	12	18
Fourth Semester			
IEE 234—The Theory and Operation of Modulation and Transmitters	3	0	3
IEE 235—The Principles of Receivers	3	0	3
IEE 238—Solid State Devices	0	6	3
IEE 239—Integrated Circuitry	0	6	3
IEE 233—Logarithms	3	0	3
Electives†	3	0	3
	12	12	18

†By approval

Suggested Technical Arts electives: DFT 133, MM 131, MM 132, MM 133, MM 231, MM 232, MM 233, BC 231, BC 232, JR 232, MT 133, WLD 133.

Industrial Electricity and Electronics Technology (IEE)

131—Basic Laws and Theories. Fundamentals of electricity, Ohm's law and power, simple series and parallel d-c circuits, and combination circuits. Class: 3 hours. Credit: 3 semester hours.

132—The Application of Kirchhoff's Laws. D-C meters, conductors, insulators, and resistors, magnetism and electromagnetic induction. 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—Alternating Voltage and Current Fundamentals. Inductance, inductive reactance, and inductive circuits, capacitance, capacitive reactance, and capacitive circuits. Prerequisite: IEE 131 and 132. Class: 3 hours. Credit: 3 semester hours.

135—Alternating Current Circuits. Series and parallel resonance, fundamental principles and characteristics of electron tubes and transistors. Prerequisite: IEE 131 and 132. Class: 3 hours. Credit: 3 semester hours.

136—Basic Laboratory. Tools, materials, and basic shop skills of the electrical trade; lighting and signal wiring, electronic components and symbols. Laboratory: 6 hours. Credit: 3 semester hours.

137—Equipment Familiarization. Familiarization with hand tools used in electronics, VTVM and milliammeter familiarization, fundamental DC circuits and analysis by voltage, current, and resistance measurements. Laboratory: 6 hours. Credit: 3 semester hours.

138—Laboratory Analysis. Familiarization with the oscilloscope, and the audio and RF signal generators; construction, experimentation, and analysis of AC circuits. Prerequisite: IEE 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

139—Reactive Experiments. Experimentation with circuits containing inductance, capacitance, and resistance; AC series and parallel resonant circuits. Prerequisite: 136 and 137. Laboratory: 6 hours. Credit: 3 semester hours.

230—Electronic Mathematics. Application of electrical theory of alternating current circuitry. Prerequisite: TM 133 and IEE 135. Class: 3 hours. Credit: 3 semester hours.

231—The Theory and Operation of Vacuum Tubes. The diode, half and full wave rectification, power supply regulation, the audio amplifier and volume controls, tuned RF amplifiers and oscillators. Prerequisite: IEE 134 and 135. Class: 3 hours. Credit: 3 semester hours.

232—The Theory and Operation of Transmitters and Receivers. Transmitter circuits, antennas, transmission lines, TRF and superheterodyne receivers, mixer and detector circuits. Prerequisite: IEE 134 and 135. Class: 3 hours. Credit: 3 semester hours.

233—Logarithms. The common system of logs, operation with logarithms, exponential and logarithmic equations, application to RL and RC circuits, application to amplifiers, and application to transmission lines. Prerequisite: IEE 230. Class: 3 hours. Credit: 3 semester hours.

234—Atomic Structure of Semi-Conductive Devices. Semi-conductor materials, junction diodes and transistors, characteristics curves, transistor circuits, common emitter, base and collector configurations. Prerequisite: IEE 231 and 232. 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—Power Supplies. Experimentation and analysis of power supplies, triode vacuum tube characteristics and the triode as a DC and AC amplifier. Prerequisite: IEE 138 and 139. Laboratory: 6 hours. Credit: 3 semester hours.

237—Amplifiers. Audio, voltage and power amplifiers, transistor familiarization, and basic transistor circuit arrangements. Prerequisite: IEE 138 and 139. Laboratory: 6 hours. Credit: 3 semester hours.

238—Solid State Devices. Laboratory experiments in the construction of circuitry using solid state devices. AF and RF amplifiers and oscillators using transistors, diodes and descrete components. Prerequisite: IEE 236 and 237. Laboratory: 6 hours. Credit: 3 semester hours.

239—Integrated Circuitry. Experimentation with IC's as linear amplifiers, logic (RTL) circuits, nor logic, ramp function generators, and various trigger circuits. Prerequisite: IEE 236 and 237. Laboratory: 6 hours. Credit: 3 semester hours.

POLICE SCIENCE

(Law Enforcement)

Instructors—David K. Bruce and Victor S. Butts.

The Academic Council of Deans has approved the proposal to transfer this program in 1973-74 to a newly created Department of Public Affairs in the College of Liberal Arts.

The objective of the Police Science (Law Enforcement) program is to aid the student in achieving a level of proficiency in Law Enforcement sufficient to enable him to be a valuable member of any law enforcement agency. The program is designed to produce a well-rounded individual capable of adapting to the objectives and methods of the employing agency, and to assist in-service students in obtaining promotions within their respective departments.

A graduate of this 68-hour instructional program is awarded the Associate of Applied Science degree. The program of study conforms with the core curriculum as established by the Texas Commission on Law Enforcement Officer Standards and Education; is approved by the Coordinating Board, Texas College and University System; and contains approved Law Enforcement electives and the liberal arts sequence. Courses in the Program of Study are applicable to the Criminal Justice Program of the Government Department.

PROGRAM OF STUDY

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
PS 131—Police Organization & Administration*	3	0	3
PS 132—Introduction to Law Enforcement*	3	0	3
Eng—English Composition	3	0	3
Mth 131—Finite Mathematics I	3	0	3
Science	3	2	4
	15	2	16

Second Semester			
PS 133—Police Community Relations*	3	0	3
PS 134—Police Role in Crime & Delinquency*	3	0	3
Eng—English Composition	3	0	3
Science	3	2	4
Elective†	3	0	3
	15	2	16

Third Semester			
Gov 231—The American Constitutional System Federal & State	3	0	3
His 231—History of the United States	3	0	3
Eng—English Literature	3	0	3
PS 237—Introduction to Criminal Procedure and Evidence*	3	0	3
PS—Elective**	6	0	6
	18	0	18
Fourth Semester			
PS 234—Legal Aspects of Law Enforcement*	3	0	3
PS 232—Criminal Investigation*	3	0	3
His 232—History of United States	3	0	3
Gov 232—American & State Government	3	0	3
PS—Elective**	3	0	3
Elective†	3	0	3
	18	0	18

*Included in the Texas Commission on Law Enforcement Officer Standards and Education Core Curriculum, as approved by the Coordinating Board, Texas College and University System.

**To be chosen from PS 135, PS 136, PS 137, PS 138, PS 235, PS 236.

†By approval.

Suggested electives: Spc 131, Soc 131, Soc 132, Psy 131, Law Enforcement elective courses, His 134.

Police Science (PS)
(Law Enforcement)

111—Police Report Writing. The proper means and methods to prepare a narrative report and the correct procedures to be used in testifying before a judicial proceeding. Class: 1 hour. Credit: 1 semester hour.

131—Police Organization and Administration. The principles of organization, administration and functioning of police departments are studied. This includes personnel policies, operating division policies and command of the department as a whole. Class: 3 hours. Credit: 3 semester hours.

132—Introduction to Law Enforcement. The philosophy and history of law enforcement is studied. It includes: a survey of police problems and crimes; organization and jurisdiction of local, state and federal enforcement agencies and a survey of professional qualifications and opportunities. Class: 3 hours. Credit: 3 semester hours.

133—Police-Community Relations. The interrelationship of the law enforcement agencies of the community is covered. A study of situations and the identification of positive community action programs is included. Class: 3 hours. Credit: 3 semester hours.

134—Police Role in Delinquency. Juvenile criminal behavior is studied in order to provide an insight into casual factors, precipitating forces, and opportunities for the commission of criminal or delinquent acts. The techniques, responsibilities and capabilities of police organization in the area of delinquency prevention will be developed. Class: 3 hours. Credit: 3 semester hours.

135—Traffic Planning and Administration. The student examines police responsibilities in traffic planning and investigation. Identifies police policies and procedures in education, engineering, and enforcement responsibilities. An analytical study of special traffic problems, motor vehicle laws and accident investigation techniques is conducted. Class: 3 hours. Credit: 3 semester hours.

136—Patrol Administration. Line activities of law enforcement agencies with emphasis of the administration of the patrol functions and the prevention of crime by the patrol force; includes traffic investigation, juvenile, vice, and other specialized operational units. Class: 3 hours. Credit: 3 semester hours.

137—Traffic Law. An in-depth examination and analysis of the Uniform Act. Class: 3 hours. Credit: 3 semester hours.

138—Juvenile Procedures. A study of the methods employed in the handling of juvenile offenders; the course examines the procedures used with juveniles as they are affected by the law and local procedures. Class: 3 hours. Credit: 3 semester hours.

231—Criminal Law. This covers a brief history and philosophy of modern law which includes the structure, definition and application of commonly used Penal Statutes and leading case laws. It also includes a review of the elements of crimes, and other legal concepts as they affect the law of crimes. Class: 3 hours. Credit: 3 semester hours.

232—Criminal Investigation. Theories and concepts of the investigators' role in modern criminal investigation are studied. Basic skills necessary in conducting an investigation, developing sources of information, the collection and preservation of evidence and preparation of reports are developed. Class: 3 hours. Credit: 3 semester hours.

233—Law and Society. Law as an instrument of social control; functions, sources and development of the law; and machinery of laws as a part of society. Class: 3 hours. Credit: 3 semester hours.

234—Legal Aspects of Law Enforcement. Legal problems which confront the police officer with particular emphasis on the legal controls over police investigative and enforcement techniques; arrest, search and seizure; identification procedures; statements and confessions. Class: 3 hours. Credit: 3 semester hours.

235—Penology. Past and present theories of crime evaluation of prevention, control and treatment programs as they relate to crime; a study of the operation and management of the jail. Class: 3 hours. Credit: 3 semester hours.

236—Probation and Parole. The student studies the State Law with regard to probation and patrol and examining the procedures which would be employed in the administration of probational and parole programs and the persons subject to such programs. Class: 3 hours. Credit: 3 semester hours.

237—Introduction to Criminal Procedures and Evidence. The student examines the rules governing the admissibility of evidence as they affect the law enforcement officer in the administration of criminal justice. This course includes a study of the rules of evidence, kinds and degrees of evidence and their application in the legal

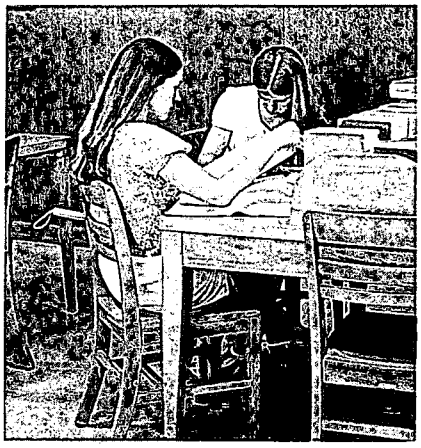
processes from arrest, through probation and parole procedures to final disposition of the case. Class: 3 hours. Credit: 3 semester hours.

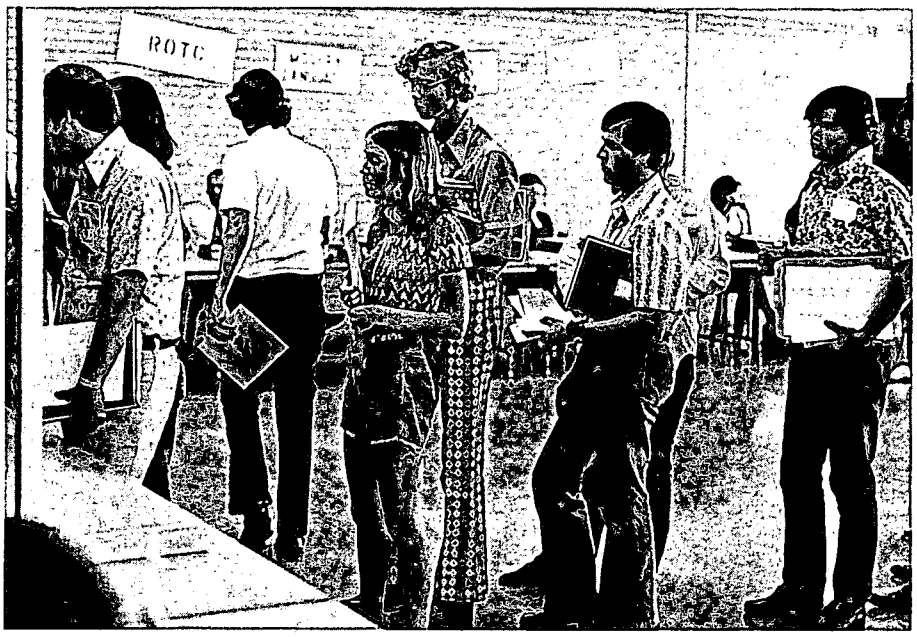
238—Introduction to Criminalistics. Physical evidence, collection, identification preservation and transportation crime laboratory capability and limitations, examinations of physical evidence to the extent supported by existing or available facilities. Prerequisite: PS 232. Class: 3 hours. Credit: 3 semester hours.

239—Narcotics and Vice Control. The history and casual factors of vice-type crimes are covered. This includes administrative structure and policy formulations that influence the detection, repression, and control of gambling, prostitution, sex offenders, liquor and narcotic violations. Class: 3 hours. Credit: 3 semester hours.

245—Police Internship. A work experience to increase student understanding of law enforcement administration and operation; the internship is initiated by the school in an agency, and both college and agency supervise and direct the student's program. Class: 1 hour. Laboratory: 15 hours. Credit: 4 semester hours.

246—Police Internship. A work experience to increase understanding of law enforcement administration and operation; the internship is initiated by the College in an agency, and both college and agency supervise and direct the student's program. Class: 1 hour. Laboratory: 15 hours. Credit: 4 semester hours.




ROTC

Bachelor of Science Degree

Robert J. Lawrence, Head,
Technical Department

M. Paul Roy, Head, Industrial
Department

BACHELOR OF SCIENCE IN INDUSTRIAL TECHNOLOGY

The College of Technical Arts awards the Bachelor of Science degree in Industrial Technology to students who successfully complete an approved program of study. The purpose of the degree is to provide a student with advanced skills and general education which will make him eligible for many jobs not open to two-year graduates.

Students may select from two major areas for their program of study: Drafting Technology and Industrial Electricity and Electronics Technology.

ELECTIVE WORK

Students may take elective work in four emphasis areas: teaching, management, engineering, and liberal arts. The emphasis work constitutes 18 hours of which 12 hours must be at the 300 or 400 level.

A. *Teaching Emphasis:* To take courses in the College of Education, students must take three hours of English literature and 6 hours of general education in addition to those listed in their degree plan. The following courses are suggested as electives for students who want to become vocational teachers:

EDU 331—Foundation in Education
EDU 433—Teaching Media
EDU 438—Classroom Management—Secondary
EDU 332—Educational Psychology
EDU 338—Curriculum, Materials, and Evaluation in the Secondary School
EDU 4337—Tests and Measurements

B. *Management Emphasis:* Students who wish to enter into supervisory roles in their careers are advised to select courses such as those listed below. Please note that many of these courses require six hours of accounting as prerequisites.

ACC 231—Principles of Accounting
ACC 232—Principles of Accounting
ECO 232—Principles
BA 332—Principles of Finance
BA 335—Principles of Management
BA 336—Personnel Management
BA 4310—Marketing Management
BA 436—Production Management
BA 3311—Labor Law

C. *Engineering Emphasis:* Students wishing to become engineering technicians should select courses from the College of Engineering. Since many engineering courses require calculus as a prerequisite, students are advised to plan their program of study carefully.

D. *Liberal Arts Emphasis:* Students may wish to broaden their background by taking courses from different fields. It should be emphasized that students must have at least 30 hours of 300 and 400 level courses.

PROGRAM OF STUDY
Drafting Technology

First Year

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
DFT 131—Drafting Instruments	3	0	3
DFT 132—Fundamentals of Drafting	3	0	3
DFT 136—Basic Drafting Laboratory I	0	6	3
DFT 137—Basic Drafting Laboratory II	0	6	3
Mth 134—College Algebra	3	0	3
Eng—English Composition	3	0	3
	12	12	18
Second Semester			
DFT 134—Architecture Drafting Techniques	3	0	3
DFT 135—Architecture Drafting Techniques	3	0	3
DFT 138—Architectural Drafting Laboratory I	0	6	3
DFT 139—Architectural Drafting Laboratory II	0	6	3
Mth 133—Analytical Trigonometry	3	0	3
Eng—English Composition	3	0	3
	12	12	18

Second Year

First Semester			
DFT 231—A.S.M. Standards, Pipe and Fitting Designs	3	0	3
DFT 232—Process Pipe Drafting	3	0	3
DFT 236—Systems Drafting Laboratory I	0	6	3
DFT 237—Systems Drafting Laboratory II	0	6	3
DFT 230—Smoley's Fundamentals	3	0	3
Soc 131—Introduction to Sociology	3	0	3
	12	12	18
Second Semester			
DFT 234—A.I.S.C. Specifications and Standards	3	0	3
DFT 235—Structural Design	3	0	3
DFT 238—Structural Design Laboratory I	0	6	3
DFT 239—Structural Design Laboratory II	0	6	3
DFT 233—Application of Smoley's Tables	3	0	3
Elective†	3	0	3
	12	12	18

Third Year

First Semester			
DFT 331—Advanced Design Drafting*	3	0	3
DFT 336—Advanced Design Laboratory*	0	6	3
Science Elective	3	2	4
His 231—United States History	3	0	3
Elective†	3	0	3
HPE 111—Activity	3	0	1
	15	8	17
Second Semester			
DFT 332—Machine Tools Design*	3	0	3
DFT 337—Machine Tools Design Laboratory*	0	6	3
Science Elective	3	2	4
His 232—United States History	3	0	3
Elective†	3	0	3
HPE 112—Activity	3	0	1
	15	8	17

Fourth Year

First Semester			
DFT 431—Advanced Reproductive Drafting Techniques*	3	0	3
Gov 231—State Government	3	0	3
Eng—English Literature	3	0	3
HPE 211—Activity	3	0	2
Elective†	3	0	3
Spc 131—Speech Communications	3	0	3
	18	0	17
Second Semester			
DFT 432—Individual Project Laboratory*	3	0	3
Gov 232—National Government	3	0	3
Eco 231—Principles	3	0	3
Electives†	6	0	6
HPE 212—Activity	3	0	2
	18	0	17

*Certain selected engineering courses may be substituted for these advanced Technical Arts courses.

†Electives must include 12 hours in 300 and 400 level courses. See following section for more information.

PROGRAM OF STUDY

Industrial Electricity and Electronics Technology

First Year

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
IEE 131—Basic Laws and Theories	3	0	3
IEE 132—The Application of Kirchoff's Law	3	0	3
IEE 136—Basic Laboratory	0	6	3
IEE 137—Equipment Familiarization	0	6	3
Mth 134—College Algebra	3	0	3
Eng—English Composition	3	0	3
TM 111—Slide Rule	1	0	1
	13	12	19
Second Semester			
IEE 134—Alternating Voltage and Current Fundamentals	3	0	3
IEE 135—Alternating Current Circuits	3	0	3
IEE 138—Laboratory Analysis	0	6	3
IEE 139—Reactive Experiments	0	6	3
Mth 133—Analytical Trigonometry	3	0	3
Eng—English Composition	3	0	3
	12	12	18

Second Year

First Semester			
IEE 231—The Theory and Operation of Vacuum Tubes and Associated Circuits	3	0	3
IEE 232—Radio Frequency Circuits as Applied to Receiving Apparatus	3	0	3
IEE 236—Power Supplies	0	6	3
IEE 237—Amplifiers	0	6	3
IEE 230—Electronic Mathematics	3	0	3
Soc 131—Introduction to Sociology	3	0	3
	12	12	18
Second Semester			
IEE 234—The Theory and Operation of Modulation and Transmitters	3	0	3
IEE 235—The Principles of Receivers	3	0	3
IEE 238—Solid State Devices	0	6	3
IEE 239—Integrated Circuitry	0	6	3
IEE 233—Logarithms	3	0	3
Elective†	3	0	3
	12	12	18

Third Year

First Semester	*Lecture Hours*	*Lab Hours*	*Semester Hours*
IEE 331—Synthesis of Transistor Amplifiers I*	3	0	3
IEE 336—Transistor Circuit Measurements*	0	6	3
His 231—United States History	3	0	3
Science Elective	3	2	4
Elective†	3	0	3
HPE 111—Activity	3	0	1
	15	8	17
Second Semester			
IEE 332—Synthesis of Transistor Amplifiers II*	3	0	3
IEE 337—Transistor Circuit Analysis*	0	6	3
Science Elective	3	2	4
His 232—United States History	3	0	3
Elective†	3	0	3
HPE 112—Activity	3	0	1
	15	8	17

Fourth Year

First Semester			
IEE 431—Introductory Microwave Tubing*	3	0	3
Gov 231—State Government	3	0	3
Eng—English Literature	3	0	3
HPE—Activity	3	0	2
Electives†	3	0	3
Spc 131—Speech Communications	3	0	3
	18	0	17
Second Semester			
IEE 432—Telemetering Devices and Analysis*	3	0	3
Gov 232—National Government	3	0	3
Eco 231—Principles	3	0	3
Electives†	6	0	6
HPE 212—Activity	3	0	2
	18	0	17

*Certain selected engineering courses may be substituted for these advanced Technical Arts courses.

†Electives must include 12 hours in 300 and 400 level courses. See following section for more information.

Industrial Electricity and Electronics Technology (IEE)

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 331. 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.

Drafting Technology (DFT)

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.

Adult Training Programs

Certificates of Completion: Industrial Supervision, Law Enforcement Training, Nurse Assistant, Plant Maintenance and Operations, Real Estate

Norman E. Lowrey, Supervisor

No SAT

INDUSTRIAL SUPERVISION

This series of courses is planned for business and industry supervisory personnel. Employment in business or industry in a supervisory or leadership position is a prerequisite to registration in supervisory courses. The content of the program offered 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 18 semester hours from the following list of courses is awarded a Certificate of Completion in Industrial Supervision.

Industrial Supervision (IS)

1311—Supervisory Leadership. The incident process as used in this course provides experience in handling case problems and in analyzing real supervisory situations. Motivation of employees, development of leadership qualities, utilization of authority, and handling of labor relations problems are studied. Class: 3 hours. Credit: 3 semester hours.

1312—Industrial Economics. The function of tools, workers, management, and investors in the American industrial system. The course also includes discussions of the place of government in the economy, the significance of profits, cost, wages, and money and a study of personal financial planning. Class: 3 hours. Credit: 3 semester hours.

1313—Industrial Relations. A survey of the industrial relations functions in an industrial organization. Topics include employment, merit rating, job placement, public relations, counseling and training. Class: 3 hours. Credit: 3 semester hours.

1314—Supervisory Methods in Municipal Administration. Modern methods and techniques of supervision within the various departments, divisions, and offices of city government. Class: 3 hours. Credit: 3 semester hours.

1315—Cost Reduction. Methods for carrying out a comprehensive, continuing cost reduction and control program including how to get all levels of supervisory management solidly behind the cost reduction effort and how to get supervisors to think of cost control as an integral part of the overall job, rather than a short-term project. Class: 3 hours. Credit: 3 semester hours.

1316—Safety for Supervisors. Safety costs, cause 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. Class: 3 hours. Credit: 3 semester hours.

1317—Labor Law. The Taft-Hartley and other federal and state laws in the field of labor-management relations and how they affect the foreman and supervisor in industry and business. Class: 3 hours. Credit: 3 semester hours.

1318—Industrial Psychology. 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. Class: 3 hours. Credit: 3 semester hours.

1319—Wages and Salary Administration. Problems involved in wage and salary administration including labor legislation, wage criteria, wage payment plan and job evaluation. Class: 3 hours. Credit: 3 semester hours.

1320—Job Evaluation. Job evaluation systems and techniques. Problems of installing a program of job evaluation. Actual cases are studied. Class: 3 hours. Credit: 3 semester hours.

1321—Management Supervision. Methods and techniques of supervision from the executive viewpoint. Topics included are organization and management, control of waste, manpower, machines and material, getting cooperation, communications, human relations, controlling accidents and selected management problems. Class: 3 hours. Credit: 3 semester hours.

1322—Labor Relations. 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.

1323—Industrial Organization and Management. An advanced course in management. The course presents management functions in detail, so that inter-relationships of functions of the organization are revealed. Class: 3 hours. Credit: 3 semester hours.

1324—Industrial Sociology. A study of the social structure of modern large-scale industry and its relation to society. 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.

LAW ENFORCEMENT TRAINING

Instructor—Edward L. Parker.

The objective of this program is to provide basic law enforcement training to meet the certification requirements for police officers as set by the Texas Commission on Law Enforcement Officer's Standards and Education. The program consists of six-weeks of intensified training. It usually is offered four times each year.

Admission to this program is limited to officers and reserve officers who currently are associated with law enforcement agencies.

The person who successfully completes this instructional program (nine semester hours) is awarded a Certificate of Completion in Law Enforcement by the University, and the Basic Certificate from the Texas Commission on Law Enforcement Officer's Standards and Education.

Law Enforcement Academy (LEA)

1311—Introduction to Law Enforcement. A study of: police service as a career; community relations; police ethics; court appearance; laws of arrest; search and seizure procedures; rules of evidence; case preparation; and criminal law. Class: 48 hours total. Credit: 3 semester hours.

1312—Law Enforcement Related Fields. A study of: handling of juveniles; first aid; report writing; interrogation and interviews; field demonstrations; adult and juvenile probation; Texas liquor laws; civil rights; sketching and scale drawing; arson investigation; speech; alcoholism; sex crimes; law enforcement agencies, federal, state and local; auto theft; counterfeiting. Class: 48 hours. Credit: 3 semester hours.

1611—Law Enforcement Procedures. A study of: patrol methods and procedures; mechanics of arrest; crowd control; defensive tactics; firearm training; traffic supervision; criminal investigation; and detention procedures. Class: 64 hours total. Laboratory: 128 hours. Credit: 6 semester hours.

NURSE ASSISTANT

Instructor—Betty F. Jordan.

The objective of this program is to prepare the student for the first level of bedside nursing in hospitals or nursing homes under the direction of nursing and medical staff.

Applicants interested in this program should make application through the Adult Training Programs office. Applicants are not required to be high school graduates and are not required to take the Scholastic Aptitude Test.

A person who successfully completes this instructional program (six semester hours) is awarded a Certificate of Completion in Nurse Assisting.

Nurse Assistant (NA)

1311—Medical Communication. This includes developing skills of communication, observation, ethics, arithmetic review, and vocabulary of body systems. Class: 3 hours. Credit: 3 semester hours.

1312—Nursing Procedures. Developing skills and specific procedures for competent bedside nursing, including familiarization of hospital equipment. Class: 3 hours. Credit: 3 semester hours.

1313—Geriatric Nursing. A study of the field of Geriatrics, the geriatric patient as a person, housing, patient and institutional hygiene, rehabilitation and clinical nursing. Class: 3 hours. Credit: 3 semester hours.

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 successfully completes 30 semester hours of this instructional program is awarded a Certificate of Completion in Plant Maintenance and Operations.

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.

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.

Courses in other departments may be credited toward the Certificate of Completion in Plant Maintenance and Operations. A partial listing is as follows: TM 131, TM 132, RAC 131, RAC 132, RAC 136, RAC 137, DFT 133, DFT 230, DFT 236, DFT 237, IEE 131, IEE 132, IEE 133, IEE 136, IEE 137, WLD 133.

REAL ESTATE

This program of study is designed to prepare a student to meet the classroom requirements of the State Licensure Board for a sales and brokers license and to improve his competence in the specialized areas of real estate.

A person who successfully completes 12 semester hours from the following list of courses is awarded a Certificate of Completion in Real Estate.

Real Estate (RES)

1211—Real Estate I. Texas Realtor's Institute I. This course deals primarily with residential properties and covers the essentials of real estate brokerage. Class: 2 hours. Credit: 2 semester hours.

1221—Real Estate II. Texas Realtor's Institute Course II. This course introduces the student to tax free exchanges, marketing, construction, management, appraisal, and financing of commercial properties. Advanced sales and administration techniques are included. Class: 2 hours. Credit: 2 semester hours.

1231—Real Estate III. Texas Realtor's Institute Course III. This course provides a student with an advanced approach in the development of investment property and the establishment of a personal estate. Class: 2 hours. Credit: 2 semester hours.

1241—Real Estate Appraising I. This course introduces a student to the methods of appraising real property. Class: 2 hours. Credit: 2 semester hours.

1251—Real Estate Appraising II. This course introduces a student to appraising from the income approach to value through residual techniques. Prerequisite: RGS 1241. Class: 2 hours. Credit: 2 semester hours.

1261—Real Estate Finance. A study of the finances involved in real estate transactions. Class: 2 hours. Credit: 2 semester hours.

1271—Real Estate Law. A study of laws and regulations concerning real estate transactions. Class: 2 hours. Credit: 2 semester hours .

1281—Real Estate Investments. A study of investments versus speculation, capital gain, and real estate versus other areas. Class: 2 hours. Credit: 2 semester hours.

Continuing Education

Programs: Conferences and Workshops, Short Courses, Special Training Activities

Joseph Reho, Director
James D. Spencer, Supervisor
Vocational-Technical
Continuing Education

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 two-day conference is held each Spring to increase the managerial competence of administrators and managers. Outstanding speakers are selected for the four sessions of 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.

Medical Records. The objective of this course is to provide training in medical record keeping for physicians' offices, clinics and hospitals.

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.

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.

Welding. Courses are offered in basic welding to prepare workers for the shipbuilding industry. Other courses are conducted to provide advanced training in pipe welding, inert gas welding and semi-automatic welding.

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 or 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 vary 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, Millwright and Plumbing.

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.

Sewage Works Operations. This program consists of a group of courses designed to meet the requirements of the Texas State Department of Health for the certification of operators of sewage treatment plants.

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.

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.

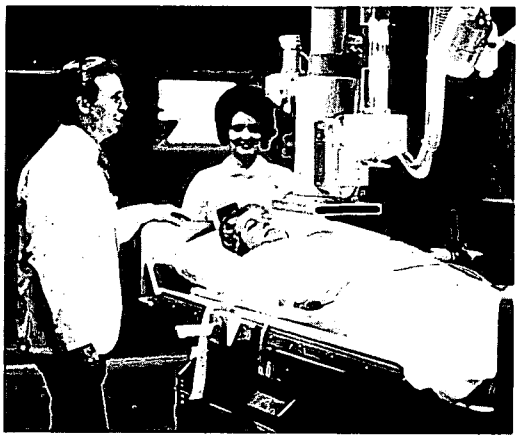
DIRECTORY FOR CORRESPONDENCE
COLLEGE OF TECHNICAL ARTS

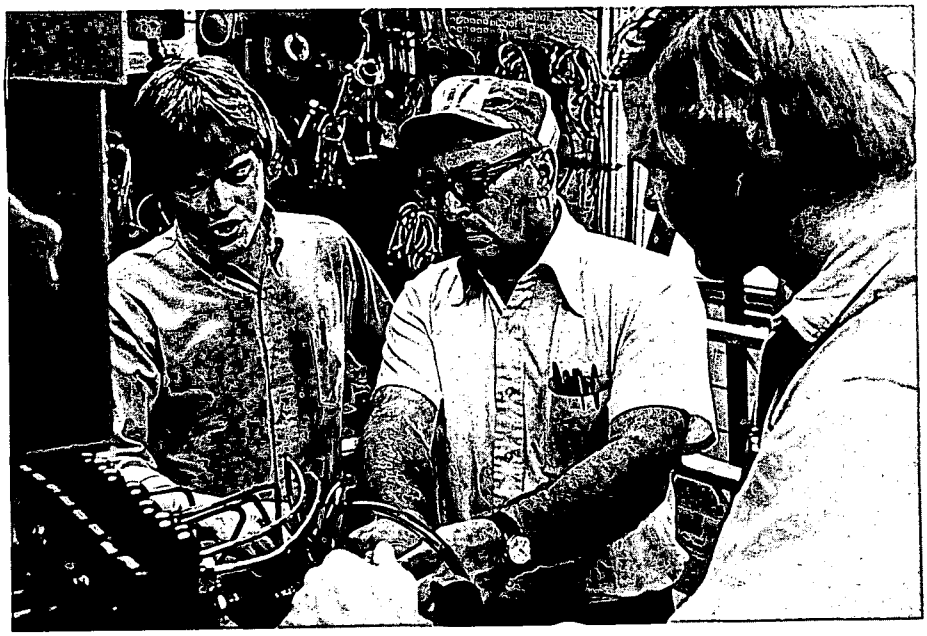
Information concerning the College of Technical Arts may be obtained by calling the Dean's office, 838-8321. All mail should be addressed to Box 10043, Lamar University Station, Beaumont, Texas 77710.

Dean ..... Dr. Kenneth E. Shipper
Assistant Dean ..... Gus A. Carlsen
Vocational Counselor ..... Harry L. Williams
Extended Day Coordinator ..... Norman Lowrey
Health Services Department ..... Dolores Jones, Head
Industrial Department ..... M. Paul Roy, Head
Related Arts Department ..... Joe I. Juarez, Acting Head
Technical Department ..... Robert J. Lawrence, Head
Law Enforcement Training ..... Edward L. Parker, Coordinator
Vocational Nursing ..... Dolores Jones, Director
Vocational-Technical Continuing Education ..... James D. Spencer

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

President ..... Dr. John E. Gray, Box 10001
Academic Affairs ..... Andrew J. Johnson, Vice-President, Box 10002
Financial Affairs ..... H. C. Galloway, Vice-President, Box 10003
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 Aids/Awards ..... Jess R. Davis, Director, Box 10042
Testing/Veterans' Affairs ..... Joe B. Thrash, Director, Box 10012
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 County ..... J. B. Welch, Director, 410 Front St., Orange, Texas 77630





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CRAFTSMAN / LUBBOCK, TEX
COLLEGE DIVISION