

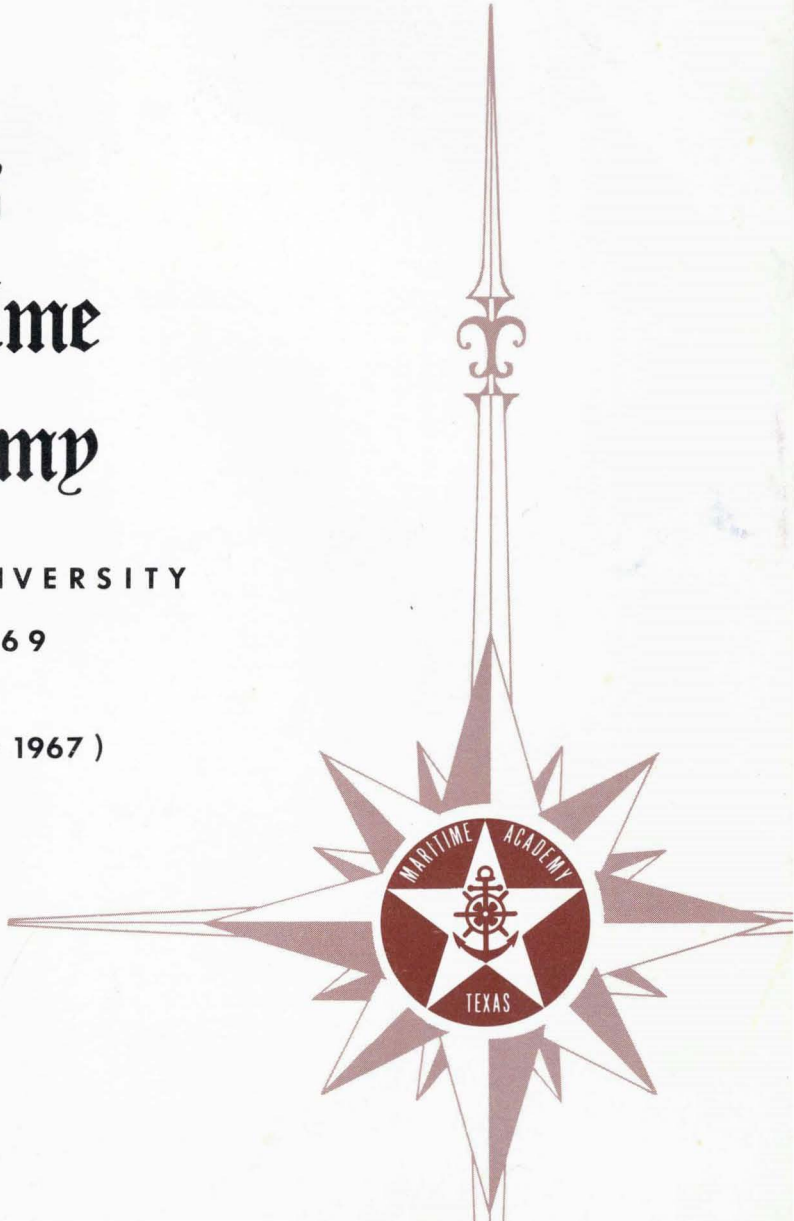


# The Texas Maritime Academy

OF  
TEXAS A&M UNIVERSITY

1968 - 1969

Revised ( 1 May 1967 )



7-15-67

BULLETIN  
OF  
TEXAS A&M UNIVERSITY

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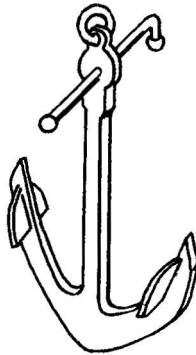
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GENERAL CATALOGUE  
RECORD OF SESSION 1966-67  
ANNOUNCEMENTS FOR THE SESSION 1967-68



*Texas Maritime Academy*

GALVESTON, TEXAS 77550

1968 - 1969

Revised (1 May 1967)

## The Texas A&M University System

Composed of Texas A&M University and all colleges, agencies and services under the supervision of the Board of Directors of Texas A&M University, including:

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Texas Agricultural Experiment Station  
Texas Agricultural Extension Service  
Texas Engineering Experiment Station  
Texas Engineering Extension Service  
Texas Transportation Institute  
Texas Maritime Academy

James Connally Technical Institute

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# Texas A&M University

Texas A&M University is the state's oldest public institution of higher education. It owes its origin to the Morrill Act approved by the Congress on July 2, 1862. This act provided for donation of public land to the several states to be sold at auction and the proceeds set aside in a perpetual fund. The act directed that interest from this fund "be used to support a technological college whose objective must be, without excluding other scientific and classical studies and including military tactics, to teach branches of learning pertaining to agriculture and mechanical arts in order to promote the liberal and practical education of the industrial classes in the various pursuits and professions of life. . ."

By act of the Legislature of Texas, 180,000 acres of land scrip were sold at 87 cents per acre on April 17, 1871. Proceeds from the sale went into \$174,000 of gold frontier defense bonds of Texas, forming the perpetual endowment for the institution. This same act appropriated \$75,000 for the erection of buildings and bound the state to defray all expenses of administration of the college exceeding the annual interest from the endowment. A commission created to locate the institution accepted the offer of 2,416 acres of land from citizens of Brazos County and instruction began in 1876.

As the state of Texas grew, so did its land-grant college. By 1963, the institution had grown in physical size to a \$60,000,000 institution embracing the study of science, the arts, architecture, veterinary medicine, business, education, marine engineering and transportation in addition to the mainstays of engineering and agriculture. Graduate programs of study and research had gained national stature.

In keeping with the diversified and expanded character of the institution, the 58th Legislature of Texas changed the name of the college on August 23, 1963, to Texas A&M University.

## LOCATION

The community of College Station surrounds the campus of Texas A&M University. This town boasts of churches representing the leading denominations, an excellent public school system, adequate shopping districts to serve its citizens, and motels and restaurants to accommodate guests of students and staff of the University. Nearby Bryan supplements these advantages.

With the exception of the Maritime Academy, all instruction is conducted on the main campus at College Station. This university community is located 100 miles north of Houston, 100 miles east of Austin, and 170 miles south of Dallas. State highways, Greyhound bus lines, and Trans-Texas Airways serve to connect College Station with the rest of the State. Easterwood Field, the University airport, is located approximately two miles from the campus. First-year students in the Maritime Academy attend classes on the main campus. The following three years of instruction are given at the Texas Maritime Academy Campus, located in Galveston, a city 50 miles south of Houston and on the Gulf of Mexico.

## ACCREDITATION

The Texas A&M University is accredited by the Southern Association of Colleges and Schools, the Association of Texas Colleges and Universities, and the Texas Education Agency. The curricula in architecture are accredited by the National Architectural Accrediting Board, and the veterinary medicine degree program is accredited by the American Veterinary Medical Association Council on Education. All of the undergraduate engineering curricula, including agricultural engineering, are accredited by the Engineers' Council for Professional Development. Other accrediting agencies which have approved programs offered at the University are the American Chemical Society and the American Council on Education for Journalism.

## THE SUMMER SESSION

Texas A&M University conducts a summer session consisting of two terms of six weeks each for the benefit of both graduate and undergraduate students.

During the summer session courses are offered in most of the departments and are selected to meet the needs of the regular university students. Emphasis is also placed on planning a program for teachers and administrators who wish to do advanced work. A number of departments offer sufficient work for the Master's degree to be earned by attendance during the summer months. Instruction during the summer session is given by members of the Texas A&M University faculty and by teachers of prominence from other institutions.

A separate catalogue for the summer session giving course offerings and other pertinent information is published each spring and is available on request from the Office of the Director of Admissions.

See the section on the Texas Maritime Academy for information on the Summer Cruise of the T. S. Texas Clipper.

## ADMISSION

### APPLICATION FOR ADMISSION

Any person who desires to apply for admission to the University should write to the Director of Admissions, Texas A&M University, College Station, Texas, for a formal application blank. The applicant should complete the form according to the directions printed thereon and return it to the Admissions Office. If the applicant has attended any other college or university, he must submit a complete, official, and original transcript from each institution previously attended. In such a case, the college transcript will serve in lieu of the high school transcript required of those who have had high school attendance only. It is extremely important that these credentials be submitted in advance of registration. If this cannot be done, the applicant should bring them at the opening of the session. Without the credentials the applicant cannot be admitted, and valuable time will be lost if he has to send for them after arriving at the University.

When admission requirements have been satisfied, the Director of Admissions will then send the applicant a letter of acceptance, a room reservation card, and a physical examination form to be filled out by a physician. The physical examination report must be completed and returned to the Admissions Office prior to the date of registration for classes.

All applicants for admission to the University must be of good moral character, at least 16<sup>+</sup> years old, and free from contagious or infectious diseases.

In addition to the normal requirements for admission, a student seeking to enroll in the Texas Maritime Academy must satisfy the following requirements:

1. He must be a citizen of the United States.
2. He must be unmarried. (Regulations require that the Maritime Cadet remain unmarried until graduation.)

Any woman who meets the normal requirements for admission may attend the summer session. In addition to the normal requirements for admission, a woman seeking to enroll in Texas A&M University for the Fall or Spring Semester must:

1. Be the wife or daughter of a student registered in a fall or spring semester at Texas A&M University; or
2. Be the wife or daughter of a member of the faculty, be an employee, or be associated with the faculty and staff of Texas A&M University; or
3. Be the wife or daughter of a retired or deceased member of the faculty and staff of Texas A&M University; or
4. Be intending to enroll in a class, pursue a course of study, or use facilities not offered at any other state-supported college or university, or be seeking an academic goal which for any reason can best be achieved at Texas A&M University; or

\*Texas Maritime Academy students must be at least 17 and not more than 22 years of age on the day of registration.

5. Be pursuing a course of study leading to a graduate or professional degree offered at Texas A&M University, the undergraduate requirements of which can be fulfilled at Texas A&M University but not at any other Texas state-supported college or university.

A high school student who is eligible for admission to the University and who wishes to enter during the summer may well consider the opportunities of combining study and recreation at the Junction Adjunct of Texas A&M University. Excellent studying, living, and recreational facilities are available at this beautiful Kimble County campsite in the heart of the Texas hill country. Application blanks for admission to the Adjunct may be obtained from the Director of Admissions, Texas A&M University, College Station, Texas.

### HIGH SCHOOL UNIT REQUIREMENTS

An applicant must have graduated from a properly accredited secondary school with a minimum of sixteen units (credits) which are acceptable to the University for entrance purposes. Those with superior high school records but who have unit deficiencies will be considered on the basis of their merit. Other applicants who do not present the units required for admission may meet requirements on the basis of a satisfactory showing on their College Entrance Examination Board tests.

The sixteen acceptable entrance credits required of all students (with exceptions indicated where applicable) shall be distributed as follows:

Subject	Units of Credit Required	Remarks
English	4	Required of all students. Two units in a single foreign language may be substituted for 1 unit in English.
Social Science	2½	Required of all students.
Mathematics:		
Algebra	2	Required of all students.
Plane Geometry	1	Required of all students.
Trigonometry	½	Required of all students except applicants for liberal arts and teacher education programs, who may substitute ½ unit from the electives below.
Science	2	Required of all students. It is preferred that these 2 units include biology, chemistry, or physics.
Electives	4	Recommended from the following subject areas: foreign languages, mathematics, science, social science, speech. Not more than 3 vocational units may be submitted as electives. Applicants for admission to engineering, mathematics, pre-veterinary medicine, and science are strongly advised to include at least ½ unit elective in advanced mathematics.
Total	16	

### TESTS REQUIRED OF NEW STUDENTS

Texas A&M University requires certain College Entrance Examination Board (CEEB) tests as a part of its admission procedures for those applicants seeking admission to their first semester of college or university work. Results of these tests are to be used for admission, counseling, and placement purposes. The following tests will be required: Scholastic Aptitude Test (SAT), English Composition Achievement Test, Mathematics Achievement Test (Standard or Intensive). The College Entrance Examination Board offers these examinations at conveniently located testing centers throughout the United States and in major cities of many foreign countries. Testing dates, locations, and fees required are described in an information bulletin which may be obtained by writing to the College Entrance Examination Board, Box 592, Princeton, New Jersey.

The minimum test score requirements for admission for applicants who have never attended another college or university are stated in terms of a total score on the College Entrance Examination Board's Scholastic Aptitude Test. This total score is the

sum of the Verbal and Mathematical scores reported by the College Board. The following test score requirements for the Scholastic Aptitude Test are effective for entering freshmen:

Standing in High School Graduating Class	Minimum Total Score Acceptable for Admission
Highest Quarter	700
Second Quarter	775
Third Quarter	850
Fourth Quarter	925

### ADMISSION BY EXAMINATION

Any or all of the scholarship requirements for admission may be met by passing the entrance examinations. These will be held at the beginning of each semester under the supervision of the University authorities and will cover all the subjects required or accepted for admission as outlined above. Candidates desiring to take examinations at the University should notify the Director of Admissions well in advance of registration.

### ADMISSION BY INDIVIDUAL APPROVAL

An applicant over 21 years of age who has not recently attended school and who cannot satisfy the entrance requirements in full may be admitted without examination, subject to the following requirements:

1. He must make application on the official entrance blanks.
2. He must furnish evidence that his preparation is substantially equivalent to that required of other applicants and that he possesses the ability and seriousness of purpose necessary to pursue his studies with profit to himself and to the satisfaction of the University.

### ADMISSION OF TRANSFER STUDENTS

Admission to advanced standing may be granted to an applicant who has satisfied the requirements as outlined below:

An applicant who has attended another college or university must be eligible to return to that institution and also must have for each of the last two semesters, or for the total record if less than two semesters of attendance, a grade point ratio of 1.00 (C-average) or better on all courses undertaken.

An official transcript of the record at each college or university previously attended must be submitted.

An applicant is not at liberty to disregard the record of any previous training and gain admission by individual approval or on the basis of a high school record.

On the basis of these credentials, credit will be given for work completed with a grade of C or better, so far as the work is equivalent in character and extent to similar work at Texas A&M University. Credits given by transfer are provisional and may be cancelled at any time if the student's work in the University is unsatisfactory. Work completed with a grade of D must be validated before it can be transferred. Validation may be by examination or by completion with a grade of C or better of more advanced work in the subject area.

It is essential that all credentials be forwarded to the Director of Admissions well in advance of registration day.

### ADMISSION OF SPECIAL STUDENTS

A limited number of students over 21 years of age may be admitted to the University as special students, not candidates for a degree, subject to the following regulations:

1. The applicant must show good reason for not taking a regular course and must submit satisfactory evidence that he is prepared to profit by the special studies he wishes to pursue.
2. Record of his previous scholastic work must be submitted on the official entrance blanks and must be accompanied by a statement showing (1) his

experience; (2) a plan of study, enumerating the courses he desires to pursue; and (3) the purpose or end expected to be accomplished by his study.

### ADMISSION OF NONRESIDENT STUDENTS

A limited number of nonresident students who have attended another college or university may be accepted so long as facilities are available. Such students must have maintained a grade point ratio of 1.00 (C-average) or better on all courses undertaken in addition to a grade point ratio of 1.00 (C-average) or better for each of the last two semesters.

A limited number of out-of-state high school graduates may be accepted so long as facilities are available. Such students, in addition to satisfying all other admission requirements, must have made superior records in high school.

Students who are admitted to the University in one curriculum may not be permitted to change to another which is restricted except under the same conditions as apply to new students.

The status of the residence of a student is determined at the time of his first registration in the University, and his residence is not changed by his sojourn at Texas A&M as a student. His residence may not thereafter be changed by him, but, in the case of a minor, it may be changed by his parents, should they move to and become legal residents of the State and maintain such residence for at least one calendar year.

### REGISTRATION

Every student is required to register when he first enters the University and thereafter at the beginning of each semester. Dates of registration for the session of 1967-68 are shown on pages 2-3 of this catalogue.

Registration is not complete until the student pays his fees for the ensuing semester; reports, if not a civilian student, to ROTC headquarters for assignment to an organization; reports to the Housing Manager for assignment to a room or to report his place of residence if not living in a dormitory; and returns his assignment card, properly approved, to the Registrar's Office, where his receipt showing payment of fees will be stamped "Registered in the Registrar's Office."

## EXPENSES

The expenses for a regular session of nine months will vary with the individual concerned and with the course of study pursued. In the case of new students the total cost should range between \$950.00 and \$1,250.00. In general these amounts include four types of expenses: fees payable to the University Fiscal Department; textbooks and supplies; clothing, and military uniforms to supplement that furnished by the University; and incidental expenses, estimated to range between \$100.00 and \$200.00 depending upon the individual concerned. Nonresident students should increase these estimated expenses by \$300.00 to cover the nonresident tuition fee.

The total expenses for returning students during a regular session should be somewhat less than those amounts indicated for new students.

The professional College of Veterinary Medicine will be on the trimester program, and expenses for these periods are shown on the following pages.

### PAYMENTS

Payments to the Fiscal Department may be made by cashier's check, personal check, or money order, payable to Texas A&M University. All checks, money orders, and drafts are accepted subject to final payment.

### FEES

The fees set out herein for the session of 1967-68 are strictly approximations and are subject to change because of economic conditions and/or legislative requirements. The fees listed below are for all students except those in the professional College of Veterinary Medicine.

FULL SEMESTER	FALL 1967	SPRING 1968
Tuition	\$ 50.00*	\$ 50.00*
Student Services	30.00	30.00
Building Use Fee	16.00	16.00
Property Deposit	10.00	—
Board Including Tax	198.00	198.00
Room Rent (non air-conditioned) and Laundry	110.00	110.00
Room Deposit	20.00	—
Identification Card	1.00	—
<b>TOTAL</b>	<b>\$435.00</b>	<b>\$404.00</b>
Air-Conditioned Room, additional charge	45.00	45.00
<b>TOTAL</b>	<b>\$480.00</b>	<b>\$449.00</b>

Board may be paid in three installments of \$67.00 each with a service charge of \$3.00.

The estimated fees for students in the professional College of Veterinary Medicine are shown below:

FULL TRIMESTER	FIRST TRIMESTER	SECOND TRIMESTER	THIRD TRIMESTER
Tuition	\$50.00*	\$ 50.00*	\$ 50.00*
Student Services	30.00	30.00	18.00
Building Use Fee	16.00	16.00	16.00
Property Deposit	10.00	—	—
Board Including Tax	171.00	171.00	58.00**
Room Rent (non air-conditioned) & Laundry	98.00	98.00	98.00
Room Deposit	20.00	—	—
Identification Card	1.00	—	—
<b>TOTAL</b>	<b>\$396.00</b>	<b>\$365.00</b>	<b>\$240.00</b>
Air-Conditioned Room, additional charge	40.00	40.00	40.00
<b>TOTAL</b>	<b>\$436.00</b>	<b>\$405.00</b>	<b>\$280.00</b>

Board may be paid in three installments of \$58.00 each with a service charge of \$3.00.

For additional information concerning expenses for students in the Texas Maritime Academy, see the Texas Maritime Academy section of the catalogue. All fees are payable in full at the beginning of the semester except board, which may be paid by installments. A \$1.00 service charge for each installment will be assessed. A \$1.00 charge per day, with a maximum of \$5.00, will be made on installment payments made after the due date. Students who are delinquent with installment payments for five days will be dropped from the rolls of the University.

### EXPLANATION OF FEES

#### Tuition

The tuition fee, fixed by State law, is \$50.00 per semester for the Texas resident and \$200.00 per semester for the non-Texas resident. Payment of this fee entitles the student to register for 12 or more semester hours.

Former students who in either semester do not register on the days set apart for that purpose pay an additional fee of \$4.00.

The fee for courses audited or visited by students shall be the same as for courses for which credit is given.

#### Student Services

The student services fee is required of all students and covers the services at the University Hospital, Memorial Student Center, and the Intramural and Student Aid Programs; entitles the student to receive the Battalion Newspaper, the University Annual and the magazine published by the college in which the student is

\*The tuition fee for nonresident students is \$200.00 per semester.

\*\*This payment is for board through May 25. During the summer months students board at the University Cafeteria, and payment is not made in advance.

registered; and covers admission to all athletic events played at the University under the auspices of the Athletic Department, to Town Hall Programs, and to the Great Issues and Recital Series.

The services of the University Hospital do not include the physical examination required of entering students, surgical operations, and charges for consultations with outside physicians requested by parents.

#### Building Use Fee

The building use fee is required of all students and covers bonded indebtedness incurred for the expansion, air-conditioning, and/or rehabilitation of the Memorial Student Center, G. Rollie White Coliseum, Guion Hall, and the library.

#### Property Deposit

The property deposit of \$10.00 is charged to insure against loss by damage, breakage, etc. It is to be paid by all students and is refundable when graduating or leaving the University.

#### Board

All students living in the dormitories are required to pay for board, room rent, and laundry. Changes from dormitory student to day student will be made only on the last day of installment payments for board.

#### Room Rent and Laundry

The total amount of room rent and laundry for the semester must be paid at the time of registration. This charge for room rent includes heat, light, and cleaning the corridors but not the rooms. Air-conditioned rooms are available at higher rates.

Rooms are furnished with single bedsteads, mattresses, desks, chairs, and dressers. Students are expected to furnish their own pillows, bedding, and linens.

#### Room Deposit

The room deposit of \$20.00 must be paid by all students who will reside in the University dormitories before a room reservation or assignment can be made; this amount will be retained as a deposit against damage and breakage. The deposit may be refunded upon request prior to August 15 for the fall semester and January 15 for the spring semester for those students not planning to enroll. Students in the professional College of Veterinary Medicine who decide not to enroll must request their refunds for room reservations by August 15 for the first trimester, December 5 for the second trimester, and by March 5 for the third trimester. Refunds may be made in accordance with the University policy for those students graduating or withdrawing from school after clearance by the Office of Student Affairs.

#### Identification Card

All students must have an identification card. This card is used in registration procedures, collection of fees, cashing of checks, laundry service, for dining hall privileges, etc.

#### Laboratory Fees

A laboratory fee ranging in amount from \$2.00 to \$8.00 is charged for each laboratory course each semester.

#### ROTC Uniform Handling

Students enrolled in military, air, or naval science are required to pay a uniform handling charge of \$8.00.

#### Physical Education Service

The University will furnish the necessary physical education uniform, except shoes, to all students taking required physical education and to others who wish to use facilities of the Physical Education Department. All such students will be required to pay a handling charge of \$8.00 per semester for this service. The handling charge includes the cost of laundering the physical education uniform after each use. This amount also covers the cost of bowling, swimming, and golf for those students enrolled in these physical education courses.

#### Parking Permit

All students driving motor vehicles on the campus must pay a fee of \$5.00 per semester or trimester or \$9.00 for nine months for registration and parking.

#### OTHER EXPENSES

**Textbooks and Supplies:** The cost of textbooks and supplies will vary with the quality of items purchased and with the course of study to be pursued. Engineering students can expect to pay an amount ranging between \$80.00 and \$120.00; other students will probably pay from \$40.00 to \$60.00. These amounts are estimates for the combined fall and spring semesters.

**Uniforms:** Cadets enrolled in Army or Air Force ROTC will be furnished the basic cadet uniforms. Cadets who are not enrolled in ROTC (drills and ceremonies cadets) are required to pay \$50.00 per year for use of the issued cadet uniform. All cadets will find it necessary to supplement the uniform issued by purchases that will have a total value of approximately \$40.00 at the University Exchange Store. Since only approved articles of uniform may be worn, new students should purchase the additional items of uniform after arrival at the University.

Cadets will pay a handling charge of \$8.00 per year to cover the cost of issuing, receiving, and record keeping of the uniforms issued.

To defray the cost of additional billing and delayed handling, a charge of ten percent of the value of the uniform articles turned in subsequent to five days following the close of school, with a minimum charge of \$1.00, will be made.

**Other Items:** The University operates a store for the purpose of supplying necessary articles to students. The store carries in stock textbooks, stationery, drawing instruments, toilet articles, and other supplies. All merchandise is sold at the usual retail prices prevailing in the area. Upon recommendation of the Exchange Store Advisory Board, any profit created from the operations of the Exchange Store may be used for student welfare and other purposes of benefit to the student body.

#### AUDITING OR VISITING FEE

The fee for courses audited or visited by students shall be the same as for courses for which credit is given.

#### REFUNDS

Any student withdrawing officially (a) during the first week of class work in a semester or trimester will receive a refund of four-fifths of the tuition fee; (b) during the second week of class work, three-fifths; (c) during the third week of class work, two-fifths; (d) during the fourth week of class work, one-fifth; (e) after the fourth week of class work, nothing. No refunds will be made until ten days have elapsed from the time the fees were paid.

Students withdrawing from a laboratory course during the first week of class work in a semester or trimester will receive a refund of 100 percent of the laboratory fee paid. Students withdrawing from a laboratory course after the first week of class work in a semester or trimester shall not be entitled to a refund.

Students withdrawing officially from school during the first week of a semester or trimester will receive a refund of 100 percent of the Student Services, Building Use, and Physical Education Service fees. A student withdrawing after the first week in a semester or trimester will receive no refund.

A refund of board and laundry payment will not be made unless there is a consecutive absence of not less than ten days due to illness of the student or a member of his family, or for some other unavoidable cause. Laundry refunds are computed on a weekly basis.

There will be no refund of room rent after classes start.

#### REDUCTIONS

No reductions will be made in charges for board, room rent, or laundry in case of entrance within ten days after the opening of a semester or trimester, nor will a refund be made in case of withdrawal during the last ten days of a semester or trimester or the last ten days for which payment is made.

# Texas Maritime Academy

President, Texas A&M University.....	Earl Rudder, B.S., LL.D.
Superintendent.....	Bennett M. Dodson Master Mariner, Captain U. S. Navy (Retired), B.S.
Academic Assistant.....	Francis C. Tormollan, M.S.

## Board of Visitors

A 15-man Board of Visitors has been appointed by the Board of Directors of the Texas A&M University System to advise the President of Texas A&M University in matters concerning the Texas Maritime Academy. The members are prominent citizens from widely scattered areas of Texas with a large sprinkling of men distinguished in shipbuilding, steamship operations, port operations, and international commerce.

Rear Admiral Sherman B. Wetmore, USNR (Retired), Chairman.....	Galveston Ship Pilot and Community Leader
Captain Charles H. Glenwright, Vice Chairman.....	Port Arthur Marine Manager
John A. Parker, Secretary.....	Galveston Insurance Executive
C. Eugene DeFries.....	Houston Marine Engineers Beneficial Association
Captain John T. Everett, USMS, Maritime Administration.....	Washington, D. C. Supervisor, State Maritime Academies
Wayne C. Hall.....	College Station Academic Vice-President and Dean of Graduate College, Texas A&M University
Captain Thurman M. Gupton, USNR.....	West Columbia Eighth Naval District Representative: District Judge
Captain Ernest Hendrix.....	New Orleans Steamship Company Executive
Captain Robert L. Jones.....	Galveston President, Master Mates and Pilots Local
Emmett O. Kirkham.....	Galveston Shipyard Executive
Judge Peter J. La Valle.....	Texas City County Judge
Sam D. W. Low.....	Houston U. S. Collector of Customs
J. C. Rudd.....	Orange Marine Sales Manager
Captain Neal S. Storter.....	Brownsville Steamship Company Executive
Captain Wesley A. Walls.....	Corpus Christi Marine Surveyor

## THE TEXAS MARITIME ACADEMY

The Texas Maritime Academy was established in 1962 and is an integral part of Texas A&M University. It offers an opportunity for the high school graduate or college freshman to qualify as an officer in the U. S. Merchant Marine; earn

a commission as Ensign, United States Naval Reserve, Inactive; earn a Bachelor of Science degree in Marine Engineering or in Marine Transportation.

## COURSES OF STUDY

Two courses of study are offered — Marine Engineering and Marine Transportation. Each course consists of four years of college and professional education. Upon successful completion of the prescribed course of study and three sea training cruises, and upon passing the United States Coast Guard license examination for Third Mate or Third Assistant Engineer, the graduate will receive a Bachelor of Science degree from Texas A&M University in Marine Engineering or in Marine Transportation.

## ACADEMIC PROGRAM

The school year consists of two semesters in fall and spring for four years and three summer training cruises. The cruises are aboard the training ship Texas Clipper, a former passenger-cargo liner of 15,000 tons and 16 knots. Cruises are of about ten weeks duration and include visits to ports in Europe, the Mediterranean, South America, and the Pacific. Each year the cruise is scheduled to different parts of the world. Classes are conducted aboard ship, and each student performs duties which supplement theoretical studies ashore.

Classes for the freshman year are conducted at Texas A&M University campus at College Station. The last three years are spent at the Texas Maritime Academy campus at Galveston on the shores of the Gulf of Mexico. Classrooms and dormitories are modern and air-conditioned.

## CAREER OPPORTUNITIES

Career opportunities in this profession for well-educated and experienced young men are unlimited. A Third Officer may earn more than \$9,000 per year. A Chief Engineer or Master may earn \$18,000 and up a year. Past graduates of maritime academies are now in positions of president, vice president, or other key positions in steamship lines, ocean terminals, shipyards, international transportation agencies and are administrators in all branches of the maritime industry both at home and abroad.

## ADMISSION

In addition to meeting the general admission requirements for Texas A&M University as outlined on page 8, the applicant must be a United States citizen, physically fit, at least 17 years of age but less than 22 years of age on admission date, and unmarried and must agree to remain unmarried while enrolled.

## ADMISSION OF TRANSFER STUDENTS

Transfer students who have satisfactorily completed two semesters of freshman college courses may be accepted for admission in June. If acceptable, the student will be eligible to participate in the summer training cruise. Applicants who have completed one semester of college may be considered for admission in February. (See Admission of Transfer Students on page 10.)

## EXPENSES

Fees and expenses for the eleven-month program average about \$1,300 annually for Texas residents and \$1,750 for nonresidents. Included in these fees and expenses are tuition, student services, property deposit, room rent, room deposit, board plus tax, laundry (limited), textbooks and supplies, laboratory fees, uniforms, medical care, and summer cruise. Incidentals are not included.

## THE SPECIAL FRESHMAN CRUISE PROGRAM

Quite distinct and apart from the regular curriculum and training program is the special cruise program for freshmen. In this plan, high school graduates who are eligible for admittance to college are given an opportunity to make a cruise with the regular students. In this program the freshman is enrolled in the summer session of Texas A&M University, College of Liberal Arts. As a university student, he pursues two courses of his choice of those offered in English, mathematics and history. As a cadet, he becomes familiar with the sea and ships

through lectures and daily contact. As a visitor in foreign ports under the guidance of the faculty, he will mingle with people of other lands and will learn their cultures by visiting their cities and countryside.

A student who exhibits ability to do college level work and who demonstrates normal adaptability may choose to continue as a student in the Texas Maritime Academy, or he may elect to enter Texas A&M University or any other college or university to follow the major of his choice. The courses he has completed are transferable and are required in any college or university.

This program is made possible by the adaptation of a work-study program. Each student will attend classes in the mornings and afternoons. He will be assigned by faculty members to one of the ship's departments for the performance of assigned tasks. He will be required to observe mandatory study periods in his room each evening. Most of the assigned tasks are in the Steward's Department where he assists in food handling, cleaning of public rooms and staterooms or in operating the laundry. Those students who seek a major in engineering will be given an opportunity to carry out tasks in the engine room where they can learn a great deal of the plant operations. This experience will prove invaluable in the engineering classroom later on. Those who are more interested in navigation may be offered opportunities to work on the bridge and on deck under the supervision of one of the ship's officers.

It is not necessary that a student participate in the special freshman cruise program, but it is desirable because he learns very soon whether or not he is interested in the regular program. If he is not, he has lost nothing and has gained a great deal in preparing himself for college studies.

#### TEXAS MARITIME ACADEMY BROCHURE

The Texas Maritime Academy publishes a brochure containing additional information. For this brochure and additional information, write to the Superintendent, Texas Maritime Academy, Texas A&M University, College Station, Texas. Interested students are welcome to visit the Texas Maritime Academy campus, 50th and Avenue U., Galveston, Texas.

#### Curriculum in MARINE ENGINEERING

The Marine Engineering program leads to the degree of Bachelor of Science in Marine Engineering and to the U. S. Coast Guard issued license as Third Assistant Engineer, Steam and Motor Vessels, Ocean, Unlimited. Marine Engineering, which is closely related to mechanical engineering, emphasizes the design, operations, and maintenance of maritime power plants and associated equipment. Thorough preparation in mathematics, the sciences, and basic and applied engineering subjects is fundamental and necessary.

Engineering theory and practice are coordinated by relating classroom study to the student's practical experience aboard ship.

#### FRESHMAN YEAR

First Semester	Credit	Second Semester	Credit
Chem. 101 General Chemistry	4	Chem. 102 General Chemistry	4
E.G. 105 Engineering Graphics	2	E.G. 106 Descriptive Geometry	2
Engl. 103 Composition & Rhetoric	3	Engl. 104 Composition & Rhetoric	3
Hist. 105 History of United States	3	Hist. 106 History of United States	3
Mar.T. 101 Maritime Problems	1	Mar.E. 102 Maritime Problems	1
Math. 102 Algebra	3	Math. 103 Plane Trigonometry	3
P.E. 101	R	P.E. 102	R
	16		16

#### SOPHOMORE YEAR

##### Summer Session I

(Ten weeks at sea in T/S Texas Clipper)

Mar.E. 200 Basic Operations	4
Mar.E. 203 Engineering Laboratory	2
	6

First Semester	Credit	Second Semester	Credit
Engl. 203 Introduction to Literature	3	Econ. 203 Principles of Economics	3
Mar.E. 201 Marine Engineering Mechanics	3	Math. 122 Calculus	4
Math. 121 Analytic Geometry & Calculus	4	N.S. 210 Naval Weapons	3
N.S. 209 Sea Power	3	N.S. 311 Navigation	3
Phys. 218 Mechanics & Heat	4	Phys. 219 Sound, Light, Electricity	4
P.E. 201	R	P.E. 202	R
	17		17

#### JUNIOR YEAR

##### Summer Session II

(Ten weeks at sea in T/S Texas Clipper)

H.E. 216 First Aid	1	Mar.E. 304 Marine Thermodynamics	3
Mar.E. 204 Engineering Laboratory	2	Mar.E. 305 Strength of Materials	3
Mar.E. 300 Intermediate Operations	4	Mar.E. 308 Electrical Machinery	4
	7	Mar.E. 401 Nuclear Propulsion I	3
Govt. 206 American National Government	3	Math. 308 Differential Equations	3
Mar.E. 303 Marine Thermodynamics	3	Naut. 202 Naval Architecture II	2
Mar.E. 307 Electrical Circuits	4		
Math. 307 Calculus	3		
Naut. 201 Naval Architecture I	3		
	16		18

#### SENIOR YEAR

##### Summer Session III

(Ten weeks at sea in T/S Texas Clipper)

Mar.E. 302 Engineering Laboratory	1	Mar.E. 306 Mar. Refrigeration & Air Cond.	3
Mar.E. 400 Advanced Operations	4	Mar.E. 402 Diesel Engineering	3
Mar.E. 406 Engineering Repairs	2	Mar.E. 403 Marine Steam & Gas Turbines	3
	7	Mar.E. 414 Ship Automation	4
Econ. 318 Economics of Labor	3	Mar.E. 415 Nuclear Propulsion III	3
Mar.E. 301 Fluid Mechanics & Heat Transfer	3		
Mar.E. 405 Steam Generators	3		
Mar.E. 408 Nuclear Propulsion II	3		
N.S. 310 Naval Operations	3		
N.S. 410 Principles of Leadership	3		
	18		16

#### Curriculum in MARINE TRANSPORTATION

The department provides a basic program for deck officer candidates. This program will have a major in the field of Marine Transportation. It is designed to combine the humanities and sciences with maritime subjects to achieve a well-rounded college curriculum which will fully equip a young man to meet the present and future needs of the maritime industry afloat and ashore.

Theory and practice are integrated by relating the scholastic efforts of the academic year to those of the sea training periods in the training ship.

The student who successfully completes the courses required by this curriculum, and after passing the required U. S. Coast Guard examination, receives the degree in Bachelor of Science in Marine Transportation and a federal license as Third Mate in the Merchant Marine.

#### FRESHMAN YEAR

Chem. 101 General Chemistry	4	Engl. 104 Composition & Rhetoric	3
E.G. 105 Engineering Graphics	2	Geog. 201 World Regional Geography	3
Engl. 103 Composition & Rhetoric	3	Hist. 106 History of United States	3
Hist. 105 History of United States	3	Mgmt. 105 Introduction to Business	3
Mar.T. 101 Maritime Problems	1	Mar.E. 102 Maritime Problems	1
Math. 102 Algebra	3	Math. 103 Plane Trigonometry	3
P.E. 101	R	P.E. 102	R
	16		16

## SOPHOMORE YEAR

## Summer Session I

(Ten weeks at sea in T/S Texas Clipper)

Naut. 200	Bas. Commun., Nav., & Seamanship	4
Naut. 203	Seamanship I	3
		<hr/> 7

First Semester	Credit	Second Semester	Credit
Engl. 203 Introduction to Literature	3	Econ. 203 Principles of Economics	3
Math. 106 Spherical Trigonometry	3	Span. 106 Beginning Spanish	3
Span. 105 Beginning Spanish	3	Naut. 303 Celestial Navigation	3
Naut. 204 Terrestrial Navigation	3	N.S. 210 Naval Weapons	3
N.S. 209 Sea Power	3	Phys. 211 Brief Survey of Physics	4
P.E. 201	R	P.E. 202	R
	<hr/> 15		<hr/> 16

## JUNIOR YEAR

## Summer Session II

(Ten weeks at sea in T/S Texas Clipper)

H.E. 216	First Aid	1
Naut. 300	Interm. Commun., Nav., & Seamanship	4
Naut. 301	Seamanship II	3
		<hr/> 8

Govt. 206 American National Government	3	Engl. 301 Writing for Professional Men	3
Mar.T. 301 Ocean Transportation I	4	Hist. 318 Intern. Developments Since 1918	3
Span. 206 Intermediate Spanish	3	Span. 206 Intermediate Spanish	3
Naut. 201 Naval Architecture	3	Naut. 202 Naval Architecture II	2
Naut. 302 Seamanship III	2	Naut. 304 Electronic Navigation	3
N.S. 309 Naval Machinery	3	N.S. 310 Naval Operations	3
	<hr/> 18		<hr/> 17

## SENIOR YEAR

## Summer Session III

(Ten weeks at sea in T/S Texas Clipper)

Naut. 400	Adv. Commun., Nav., & Seamanship	4
Naut. 401	Seamanship IV	3
		<hr/> 7

Econ. 318 Economics of Labor	3	Econ. 321 Intern. Trade & Finance	3
Mar.T. 302 Marine Cargo Operations I	3	Mar.T. 402 Ocean Transportation III	4
Mar.T. 304 Ocean Transportation II	3	Mar.T. 406 Marine Cargo Operations II	3
Met. 302 Weather Rep. & Forecasting	3	Naut. 404 The Navigator	3
N.S. 410 Principles of Leadership	3	Ocn. 403 Tides, Waves, Currents, Ice	3
	<hr/> 15		<hr/> 16

## COURSES OF INSTRUCTION BY DEPARTMENTS

All courses offered in the University are described on the following pages and are listed by departments, arranged alphabetically.

The course numbering scheme is as follows:

- 101 to 199, courses primarily open to freshmen.
- 201 to 299, courses primarily open to sophomores.
- 301 to 399, courses primarily open to juniors.
- 401 to 599, courses primarily open to seniors.
- 601 to 699, courses primarily open to graduates.

Figures in parentheses following the number of the courses indicate the clock hours per week devoted to theory and practice, respectively. Theory includes recitations and lectures; practice includes work done in the laboratory, shop, drawing room, or field. The unit of credit is the semester hour, which involves one hour of theory, or from two to four hours of practice per week for one semester of eighteen weeks.

Roman numerals to the right of the credit value of each course indicate the semester in which it is regularly offered. The letter "S" denotes summer offerings.

## Department of Marine Engineering

Associate Professors Dahm, Enstice (Acting Head), Tormollan;  
Assistant Professor Mercer; Instructor French; Lecturers Brod, Moore

## 102. Orientation. (0-2). Credit 1. I

Introduction to basic marine engineering systems. General description of ship-building industry related to steamship industry. Career of engineer officer surveyed.

## 200. Basic Operations. Credit 4. S

Represents practical application of student's classroom studies while at sea in training ship during sea training period. Student required to complete several projects relating to engineering plant of ship.

## 201. Marine Engineering Mechanics. (3-0). Credit 3. I

Application of principles of mechanics to elementary problems of marine engineering design. Topics include: forces and couples, analysis of structures and friction; principles of kinetics and kinematics.

## 203. Engineering Laboratory. (1-3). Credit 2. I

Study of pipe and valve standards; packing and gasket material; gearing and bearings; use of brass and copper service tubing; silver brazing techniques; corrosion controls in heat exchangers.

## 204. Engineering Laboratory. (1-3). Credit 2. II

Academic and practical study of various marine power systems in use today and some future developments. Visits to various ships in Galveston harbor and to local shipyard will be scheduled.

## 300. Intermediate Operations. Credit 4. S

Training program for second sea training period. Sea projects required of each student under supervision of officer-instructors. Lifeboat and safety training included.

## 301. Fluid Mechanics and Heat Transfer. (3-0). Credit 3. I

Application of principles of fluid statics and dynamics to marine engineering problems. Study of fundamental laws relating to heat flow; characteristics of pumps; topics in compressible flow.

## 302. Engineering Laboratory. (0-3). Credit 1. II

Demonstration of basic concepts of fluid mechanics; calibration of flow meters, centrifugal pumps, orifice and weir flow. Additional practice given in principles and operations of power machinery.

## 303. Marine Thermodynamics. (3-0). Credit 3. I

Energy concepts. First and second law of thermodynamics. Carnot and Rankine principles and reversible heat cycles. Properties and processes of vapors; vapor power cycles and vapor refrigeration cycles.

## 304. Marine Thermodynamics. (3-0). Credit 3. II

Properties and processes of perfect gases, gas compression cycles, gas power cycles, air refrigeration cycle, and processes involving mixture of gases and vapors.

## 305. Strength of Materials. (3-0). Credit 3. II

Fundamental principles underlying analysis and design of machine members subjected to various combinations of loading. Emphasis given to theoretical and empirical basis for material specification formulas as found in United States Coast Guard Marine Engineering Regulations.

## 306. Marine Refrigeration and Air Conditioning. (2-2). Credit 3. II

Theory and practice of mechanical refrigeration. Specific topics include: thermodynamics of Reverse Carnot cycle, vapor compression cycles; thermal, physical, and chemical properties of refrigerants. Descriptions of shipboard ventilation and air conditioning.

**307. Electrical Circuits. (3-2). Credit 4. I**

Study in fundamental electrical theory as it applies to understanding of behavior, mode of operation, applications, and maintenance of electrical equipment as used aboard ship. Measurements of circuit phenomena, including fundamental amplifiers and rectifiers. Prerequisites: Math. 122; Phys. 202.

**308. Electrical Machinery. (3-2). Credit 4. II**

Study of principal types of electrical machines aboard ship, including their characteristics, applications, and control devices. Laboratory work includes actual operation and testing of electrical machinery and equipment of type installed aboard ships.

**400. Advanced Operations. Credit 4. S**

Training program for third sea training period. At end of this period each student will have achieved knowledge and will have demonstrated his ability to take complete charge of modern marine power plant while underway at sea.

**401. Nuclear Propulsion I. (3-0). Credit 3. I**

Study of reactor mechanics with emphasis placed on fluid hydraulics, reactor core design, reactor fuels and their properties, shielding, construction and operation of related auxiliary machinery.

**402. Diesel Engineering. (2-2). Credit 3. II**

Basic principles of two and four stroke cycle diesel engines; intake, scavenging and exhaust systems; injection systems, starting and reversing methods; cooling and lubricating systems; and engine room layout in modern motor vessels.

**403. Marine Steam and Gas Turbines. (2-2). Credit 3. I**

Analysis of gas turbine cycles, high-speed gas flow, turbine and compressor kinematics and thermodynamics; construction of marine steam turbines and their operating principles as applied to main propulsion and auxiliary use aboard ship; reciprocating engines.

**405. Steam Generators. (2-2). Credit 3. I**

Characteristics, historical development, and classification of marine boilers. Construction; regulations of U. S. Coast Guard Marine Engineering Regulations. Principles of combustion and boiler heat balance using fuel oil. Water conditioning and procedures in operation and maintenance.

**406. Engineering Repairs. (1-3). Credit 2. II**

Basic foundations in theory and practical applications of machinery repair equipment commonly found aboard ship. Practice in oxy-acetylene welding, brazing, cutting and electric arc welding; pipe welding, tube sweating; valve and pump maintenance; emergency repairs.

**408. Nuclear Propulsion II. (2-2). Credit 3. II**

Study of reactor controls and instrumentation including basic electronics, design, installation, and maintenance of various types of control systems. Survey of nuclear propulsion and marine industry. Advantage taken of shipyard nuclear facilities in Galveston area for practical field trips.

**414. Ship Automation. (4-0). Credit 4. II**

Study of closed loop devices including electrical, hydraulic, and mechanical systems. Ship application of automation, both current and future; survey of electron devices, instrumentation, and control. Prerequisites: Mar.E. 308; Math. 308.

**415. Nuclear Propulsion III. (3-0). Credit 3. II**

Continuation of Mar.E. 408. Prerequisite: Mar.E. 408.

**Department of Marine Transportation and Nautical Science**

Associate Professor Smith (Head); Assistant Professors Hopkins, McCane;  
Instructor Thiel; Lecturers Devoy, Johnson, Lifflander, Riddle

**MARINE TRANSPORTATION****101. Maritime Orientation. (0-2). Credit 1. I**

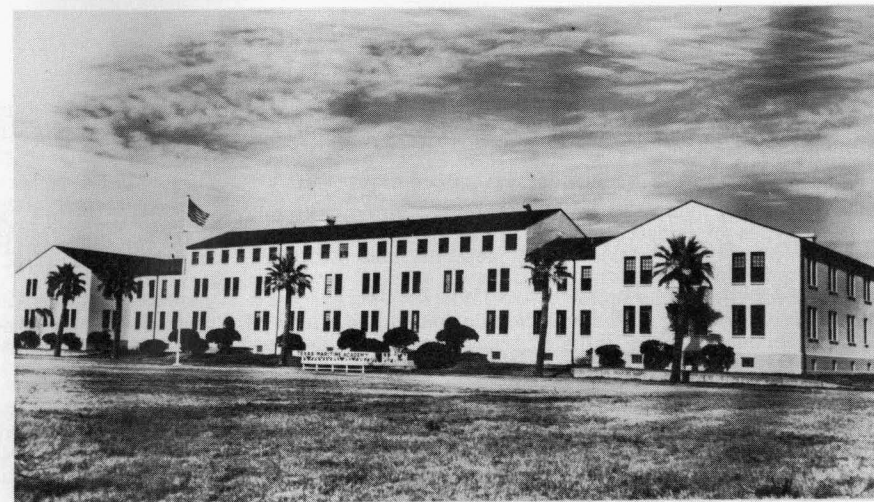
Survey of maritime industry, ocean transportation, trade routes, and role played by U. S. Merchant Marine in world trade and national defense. Ship organization and general operating methods are discussed. Emphasis placed on career patterns.

**311. Navigation. (2-2). Credit 3. II**

Offered to engineer cadets. Theoretical and practical application of principles of terrestrial and celestial navigation.

**410. Principles of Naval Leadership. (3-0). Credit 3. I**

Principles and problems of leadership with special emphasis on applied psychology.



*The Texas Maritime Academy*

**301. Ocean Transportation I. (4-0). Credit 4. I**

Concerned with shipping in world economy; production of service, including shipping process, equipment, labor, conferences, rate-making, role of government; buying of service by shipper; finance of shipping; and international conventions and treaties.

**302. Marine Cargo Operations I. (2-2). Credit 3. I**

Essential requirements and problems in stowage and carriage of general and bulk (dry and liquid), refrigerated, and special cargoes. Theoretical and practical problems in receiving, stowing, securing, transporting, and discharging all types of cargo.

**304. Ocean Transportation II. (3-0). Credit 3. II**

Concerned with carriage of goods under bills of lading and charter parties; terminal management and operation and types of carriers. Pertinent sections of American and British Shipping Laws are thoroughly studied. Prerequisite: Mar.T. 301.

**402. Ocean Transportation III. (4-0). Credit 4. III**

Covers essential principles of Admiralty and Maritime Law; advanced principles of marine insurance. Takes up in detail standard forms and Institute Clauses. Attention paid to nuclear maritime insurance activities. Principles of International Law are discussed. Prerequisite: Mar.T. 304.

**406. Marine Cargo Operations II. (2-2). Credit 3. II**

Stowage of special cargoes; ship's papers; entry and clearance procedures are covered. Laboratory work consists of problems involving research and planning. Each student will complete project related to shipping process.

**NAUTICAL SCIENCE****200. Basic Communications, Navigation, and Seamanship. Credit 4. S**

Practical application of student's classroom studies aboard training ship during first training cruise. Student completes basic projects in communications, navigation, and seamanship.

**201. Naval Architecture I. (3-0). Credit 3. I**

Description of ship as self-sustaining unit; shipbuilding nomenclature and dimensions, types of construction and classification of merchant ships; classification societies; shipbuilding materials and methods, and structural components of ship.

**202. Naval Architecture II. (2-0). Credit 2. II**

Ship's lines drawing and form calculations; principles of flotation and buoyancy; inclining experiments, free liquids, transverse stability; motion of ships in waves, seaway and dynamic loads; ship structure tests.

**203. Seamanship I. (2-3). Credit 3. I**

Art of handling small boats under oars, sail, and power. Lifeboat launching and equipment; construction and types of boats. Application of ground tackle, knotting and splicing, blocks and tackle. Communications practice; Rules of Nautical Road.

**204. Terrestrial Navigation. (2-2). Credit 3. I**

Fundamentals of basic navigation with definitions; plane sailing, middle latitude sailing, and mercator sailing; piloting, charting projections, chart navigation.

**300. Intermediate Communications, Navigation, and Seamanship. Credit 4. S**

Practical application of student's classroom studies aboard training ship during second training cruise. Student completes intermediate projects in communications, navigation, and seamanship.

**301. Seamanship II. (2-3). Credit 3. I**

Mechanical appliances on shipboard; heavy lifts; accident prevention. Marine inspection laws and communications.

**302. Seamanship III. (1-3). Credit 2. II**

Qualifying tests in communications. Thorough study made of U. S. Public Health requirements in first aid and ship sanitation. Marine inspection rules for safety at sea are stressed.

**303. Celestial Navigation. (2-3). Credit 3. I**

Survey of nautical astronomy, use of nautical almanac, sextant, compass error, and several short tabulated methods of solving the astronomical triangle are covered. Study of navigator's work at sea.

**304. Electronic Navigation. (2-2). Credit 3. II**

Study of theory, methods, and application of determining position by means of electronic aids including radar, direction finder, and Loran. Student examined by U. S. Coast Guard for certification as Radar Observer.

**400. Advanced Communications, Navigation, and Seamanship. Credit 4. S**

Represents practical application of student's classroom studies aboard training ship during third training cruise. Student completes advanced projects in communications, navigation, and seamanship.

**401. Seamanship IV. (2-3). Credit 3. II**

Principles and methods of propulsion and steering of ships. Ship handling in heavy seas, docking, undocking, anchoring, mooring, towing, salvage, and ice seamanship. Damage control stressed. Qualification examinations are held in seamanship and communications.

**404. The Navigator. (2-3). Credit 3. II**

Exercises in day's work of navigator at sea. Planning routes of voyages. Study made of buoyage systems used throughout world and survey made of various sailing guides and port directories. Gyroscope compass fundamentals and magnetic compass compensation.

**Department of Naval Science****UNITED STATES NAVY**

Associate Professor: Lieutenant Hale (Head); Assistant Professors: Lieutenants (jg) Priest, Sanders; Instructors Anderson, Berryman

The Naval Science Department administers prescribed naval subjects within academic standards set by the Chief of Naval Personnel. Each cadet who completes the naval science courses and is otherwise qualified becomes eligible for, and may be granted, an inactive commission as Ensign, U. S. Naval Reserve, upon graduation.

The objectives of the Naval Science Department are to provide the cadet with a well-rounded course in basic naval subjects; to develop an understanding of naval science and a knowledge of naval practice; and to develop, by precept and example, the psychology and technique of leadership.

Courses are offered at the Galveston campus of the Texas Maritime Academy only.

**208. Naval Orientation. (3-0). Credit 3. I**

Study of naval organization, customs, shipboard organization, types and characteristics of naval vessels, general concepts of naval warfare, and introduction to naval history and sea power.

**209. Sea Power. (3-0). Credit 3. I**

Naval history and appreciation of contribution of sea power to past, present, and future progress of United States, stressing influence of sea power on global history.

**210. Naval Weapons. (3-0). Credit 3. II**

Introduction to naval weapons to familiarize student with nomenclature and types of weapons including practical integration of modern weapons systems in the fleet today.

**309. Naval Machinery. (3-0). Credit 3. I**

Offered to deck cadets to afford basic understanding of ship stability, naval engineering including main propulsion plants (steam, nuclear, and internal combustion) with emphasis on fundamental principles.

**310. Naval Operations. (3-0). Credit 3. II**

Acquaints student with those responsibilities which face him in shipboard operations such as relative motion, tactical communications and instructions, and rules of nautical road required for basic qualification in bridge and CIC watch billets afloat.

# TEXAS CLIPPER



BULLETIN  
OF  
TEXAS A&M UNIVERSITY

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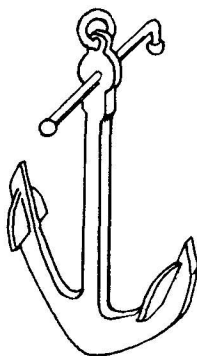
Sixth Series, Vol. 14

February 1, 1967

No. 1

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GENERAL CATALOGUE  
RECORD OF SESSION 1966-67  
ANNOUNCEMENTS FOR THE SESSION 1967-68



*Texas Maritime Academy*

GALVESTON, TEXAS 77550

1968 - 1969

Revised ( 1 May 1967 )

## The Texas A&M University System

Composed of Texas A&M University and all colleges, agencies and services under the supervision of the Board of Directors of Texas A&M University, including:

### Texas A&M University

Texas Agricultural Experiment Station  
Texas Agricultural Extension Service  
Texas Engineering Experiment Station  
Texas Engineering Extension Service  
Texas Transportation Institute  
Texas Maritime Academy

James Connally Technical Institute

Tarleton State College

Prairie View Agricultural and Mechanical College

Texas Forest Service

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## Texas A&M University

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# Texas A&M University

Texas A&M University is the state's oldest public institution of higher education. It owes its origin to the Morrill Act approved by the Congress on July 2, 1862. This act provided for donation of public land to the several states to be sold at auction and the proceeds set aside in a perpetual fund. The act directed that interest from this fund "be used to support a technological college whose objective must be, without excluding other scientific and classical studies and including military tactics, to teach branches of learning pertaining to agriculture and mechanical arts in order to promote the liberal and practical education of the industrial classes in the various pursuits and professions of life. . ."

By act of the Legislature of Texas, 180,000 acres of land scrip were sold at 87 cents per acre on April 17, 1871. Proceeds from the sale went into \$174,000 of gold frontier defense bonds of Texas, forming the perpetual endowment for the institution. This same act appropriated \$75,000 for the erection of buildings and bound the state to defray all expenses of administration of the college exceeding the annual interest from the endowment. A commission created to locate the institution accepted the offer of 2,416 acres of land from citizens of Brazos County and instruction began in 1876.

As the state of Texas grew, so did its land-grant college. By 1963, the institution had grown in physical size to a \$60,000,000 institution embracing the study of science, the arts, architecture, veterinary medicine, business, education, marine engineering and transportation in addition to the mainstays of engineering and agriculture. Graduate programs of study and research had gained national stature.

In keeping with the diversified and expanded character of the institution, the 58th Legislature of Texas changed the name of the college on August 23, 1963, to Texas A&M University.

## LOCATION

The community of College Station surrounds the campus of Texas A&M University. This town boasts of churches representing the leading denominations, an excellent public school system, adequate shopping districts to serve its citizens, and motels and restaurants to accommodate guests of students and staff of the University. Nearby Bryan supplements these advantages.

With the exception of the Maritime Academy, all instruction is conducted on the main campus at College Station. This university community is located 100 miles north of Houston, 100 miles east of Austin, and 170 miles south of Dallas. State highways, Greyhound bus lines, and Trans-Texas Airways serve to connect College Station with the rest of the State. Easterwood Field, the University airport, is located approximately two miles from the campus. First-year students in the Maritime Academy attend classes on the main campus. The following three years of instruction are given at the Texas Maritime Academy Campus, located in Galveston, a city 50 miles south of Houston and on the Gulf of Mexico.

## ACCREDITATION

The Texas A&M University is accredited by the Southern Association of Colleges and Schools, the Association of Texas Colleges and Universities, and the Texas Education Agency. The curricula in architecture are accredited by the National Architectural Accrediting Board, and the veterinary medicine degree program is accredited by the American Veterinary Medical Association Council on Education. All of the undergraduate engineering curricula, including agricultural engineering, are accredited by the Engineers' Council for Professional Development. Other accrediting agencies which have approved programs offered at the University are the American Chemical Society and the American Council on Education for Journalism.

## THE SUMMER SESSION

Texas A&M University conducts a summer session consisting of two terms of six weeks each for the benefit of both graduate and undergraduate students.

During the summer session courses are offered in most of the departments and are selected to meet the needs of the regular university students. Emphasis is also placed on planning a program for teachers and administrators who wish to do advanced work. A number of departments offer sufficient work for the Master's degree to be earned by attendance during the summer months. Instruction during the summer session is given by members of the Texas A&M University faculty and by teachers of prominence from other institutions.

A separate catalogue for the summer session giving course offerings and other pertinent information is published each spring and is available on request from the Office of the Director of Admissions.

See the section on the Texas Maritime Academy for information on the Summer Cruise of the T. S. Texas Clipper.

## ADMISSION

### APPLICATION FOR ADMISSION

Any person who desires to apply for admission to the University should write to the Director of Admissions, Texas A&M University, College Station, Texas, for a formal application blank. The applicant should complete the form according to the directions printed thereon and return it to the Admissions Office. If the applicant has attended any other college or university, he must submit a complete, official, and original transcript from each institution previously attended. In such a case, the college transcript will serve in lieu of the high school transcript required of those who have had high school attendance only. It is extremely important that these credentials be submitted in advance of registration. If this cannot be done, the applicant should bring them at the opening of the session. Without the credentials the applicant cannot be admitted, and valuable time will be lost if he has to send for them after arriving at the University.

When admission requirements have been satisfied, the Director of Admissions will then send the applicant a letter of acceptance, a room reservation card, and a physical examination form to be filled out by a physician. The physical examination report must be completed and returned to the Admissions Office prior to the date of registration for classes.

All applicants for admission to the University must be of good moral character, at least 16½ years old, and free from contagious or infectious diseases.

In addition to the normal requirements for admission, a student seeking to enroll in the Texas Maritime Academy must satisfy the following requirements:

1. He must be a citizen of the United States.
2. He must be unmarried. (Regulations require that the Maritime Cadet remain unmarried until graduation.)

Any woman who meets the normal requirements for admission may attend the summer session. In addition to the normal requirements for admission, a woman seeking to enroll in Texas A&M University for the Fall or Spring Semester must:

1. Be the wife or daughter of a student registered in a fall or spring semester at Texas A&M University; or
2. Be the wife or daughter of a member of the faculty, be an employee, or be associated with the faculty and staff of Texas A&M University; or
3. Be the wife or daughter of a retired or deceased member of the faculty and staff of Texas A&M University; or
4. Be intending to enroll in a class, pursue a course of study, or use facilities not offered at any other state-supported college or university, or be seeking an academic goal which for any reason can best be achieved at Texas A&M University; or

\*Texas Maritime Academy students must be at least 17 and not more than 22 years of age on the day of registration.

5. Be pursuing a course of study leading to a graduate or professional degree offered at Texas A&M University, the undergraduate requirements of which can be fulfilled at Texas A&M University but not at any other Texas state-supported college or university.

A high school student who is eligible for admission to the University and who wishes to enter during the summer may well consider the opportunities of combining study and recreation at the Junction Adjunct of Texas A&M University. Excellent studying, living, and recreational facilities are available at this beautiful Kimble County campsite in the heart of the Texas hill country. Application blanks for admission to the Adjunct may be obtained from the Director of Admissions, Texas A&M University, College Station, Texas.

### HIGH SCHOOL UNIT REQUIREMENTS

An applicant must have graduated from a properly accredited secondary school with a minimum of sixteen units (credits) which are acceptable to the University for entrance purposes. Those with superior high school records but who have unit deficiencies will be considered on the basis of their merit. Other applicants who do not present the units required for admission may meet requirements on the basis of a satisfactory showing on their College Entrance Examination Board tests.

The sixteen acceptable entrance credits required of all students (with exceptions indicated where applicable) shall be distributed as follows:

Subject	Units of Credit Required	Remarks
English	4	Required of all students. Two units in a single foreign language may be substituted for 1 unit in English.
Social Science	2½	Required of all students.
Mathematics:		
Algebra	2	Required of all students.
Plane Geometry	1	Required of all students.
Trigonometry	½	Required of all students except applicants for liberal arts and teacher education programs, who may substitute ½ unit from the electives below.
Science	2	Required of all students. It is preferred that these 2 units include biology, chemistry, or physics.
Electives	4	Recommended from the following subject areas: foreign languages, mathematics, science, social science, speech. Not more than 3 vocational units may be submitted as electives. Applicants for admission to engineering, mathematics, pre-veterinary medicine, and science are strongly advised to include at least ½ unit elective in advanced mathematics.
Total	16	

### TESTS REQUIRED OF NEW STUDENTS

Texas A&M University requires certain College Entrance Examination Board (CEEB) tests as a part of its admission procedures for those applicants seeking admission to their first semester of college or university work. Results of these tests are to be used for admission, counseling, and placement purposes. The following tests will be required: Scholastic Aptitude Test (SAT), English Composition Achievement Test, Mathematics Achievement Test (Standard or Intensive). The College Entrance Examination Board offers these examinations at conveniently located testing centers throughout the United States and in major cities of many foreign countries. Testing dates, locations, and fees required are described in an information bulletin which may be obtained by writing to the College Entrance Examination Board, Box 592, Princeton, New Jersey.

The minimum test score requirements for admission for applicants who have never attended another college or university are stated in terms of a total score on the College Entrance Examination Board's Scholastic Aptitude Test. This total score is the

sum of the Verbal and Mathematical scores reported by the College Board. The following test score requirements for the Scholastic Aptitude Test are effective for entering freshmen:

Standing in High School Graduating Class	Minimum Total Score Acceptable for Admission
Highest Quarter	700
Second Quarter	775
Third Quarter	850
Fourth Quarter	925

### ADMISSION BY EXAMINATION

Any or all of the scholarship requirements for admission may be met by passing the entrance examinations. These will be held at the beginning of each semester under the supervision of the University authorities and will cover all the subjects required or accepted for admission as outlined above. Candidates desiring to take examinations at the University should notify the Director of Admissions well in advance of registration.

### ADMISSION BY INDIVIDUAL APPROVAL

An applicant over 21 years of age who has not recently attended school and who cannot satisfy the entrance requirements in full may be admitted without examination, subject to the following requirements:

1. He must make application on the official entrance blanks.
2. He must furnish evidence that his preparation is substantially equivalent to that required of other applicants and that he possesses the ability and seriousness of purpose necessary to pursue his studies with profit to himself and to the satisfaction of the University.

### ADMISSION OF TRANSFER STUDENTS

Admission to advanced standing may be granted to an applicant who has satisfied the requirements as outlined below:

An applicant who has attended another college or university must be eligible to return to that institution and also must have for each of the last two semesters, or for the total record if less than two semesters of attendance, a grade point ratio of 1.00 (C-average) or better on all courses undertaken.

An official transcript of the record at each college or university previously attended must be submitted.

An applicant is not at liberty to disregard the record of any previous training and gain admission by individual approval or on the basis of a high school record.

On the basis of these credentials, credit will be given for work completed with a grade of C or better, so far as the work is equivalent in character and extent to similar work at Texas A&M University. Credits given by transfer are provisional and may be cancelled at any time if the student's work in the University is unsatisfactory. Work completed with a grade of D must be validated before it can be transferred. Validation may be by examination or by completion with a grade of C or better of more advanced work in the subject area.

It is essential that all credentials be forwarded to the Director of Admissions well in advance of registration day.

### ADMISSION OF SPECIAL STUDENTS

A limited number of students over 21 years of age may be admitted to the University as special students, not candidates for a degree, subject to the following regulations:

1. The applicant must show good reason for not taking a regular course and must submit satisfactory evidence that he is prepared to profit by the special studies he wishes to pursue.
2. Record of his previous scholastic work must be submitted on the official entrance blanks and must be accompanied by a statement showing (1) his

experience; (2) a plan of study, enumerating the courses he desires to pursue; and (3) the purpose or end expected to be accomplished by his study.

#### ADMISSION OF NONRESIDENT STUDENTS

A limited number of nonresident students who have attended another college or university may be accepted so long as facilities are available. Such students must have maintained a grade point ratio of 1.00 (C-average) or better on all courses undertaken in addition to a grade point ratio of 1.00 (C-average) or better for each of the last two semesters.

A limited number of out-of-state high school graduates may be accepted so long as facilities are available. Such students, in addition to satisfying all other admission requirements, must have made superior records in high school.

Students who are admitted to the University in one curriculum may not be permitted to change to another which is restricted except under the same conditions as apply to new students.

The status of the residence of a student is determined at the time of his first registration in the University, and his residence is not changed by his sojourn at Texas A&M as a student. His residence may not thereafter be changed by him, but, in the case of a minor, it may be changed by his parents, should they move to and become legal residents of the State and maintain such residence for at least one calendar year.

#### REGISTRATION

Every student is required to register when he first enters the University and thereafter at the beginning of each semester. Dates of registration for the session of 1967-68 are shown on pages 2-3 of this catalogue.

Registration is not complete until the student pays his fees for the ensuing semester; reports, if not a civilian student, to ROTC headquarters for assignment to an organization; reports to the Housing Manager for assignment to a room or to report his place of residence if not living in a dormitory; and returns his assignment card, properly approved, to the Registrar's Office, where his receipt showing payment of fees will be stamped "Registered in the Registrar's Office."

### EXPENSES

The expenses for a regular session of nine months will vary with the individual concerned and with the course of study pursued. In the case of new students the total cost should range between \$950.00 and \$1,250.00. In general these amounts include four types of expenses: fees payable to the University Fiscal Department; textbooks and supplies; clothing, and military uniforms to supplement that furnished by the University; and incidental expenses, estimated to range between \$100.00 and \$200.00 depending upon the individual concerned. Nonresident students should increase these estimated expenses by \$300.00 to cover the nonresident tuition fee.

The total expenses for returning students during a regular session should be somewhat less than those amounts indicated for new students.

The professional College of Veterinary Medicine will be on the trimester program, and expenses for these periods are shown on the following pages.

#### PAYMENTS

Payments to the Fiscal Department may be made by cashier's check, personal check, or money order, payable to Texas A&M University. All checks, money orders, and drafts are accepted subject to final payment.

#### FEES

The fees set out herein for the session of 1967-68 are strictly approximations and are subject to change because of economic conditions and/or legislative requirements. The fees listed below are for all students except those in the professional College of Veterinary Medicine.

FULL SEMESTER	FALL 1967	SPRING 1968
Tuition	\$ 50.00*	\$ 50.00*
Student Services	30.00	30.00
Building Use Fee	16.00	16.00
Property Deposit	10.00	—
Board Including Tax	198.00	198.00
Room Rent (non air-conditioned) and Laundry	110.00	110.00
Room Deposit	20.00	—
Identification Card	1.00	—
<b>TOTAL</b>	<b>\$435.00</b>	<b>\$404.00</b>
Air-Conditioned Room, additional charge	45.00	45.00
<b>TOTAL</b>	<b>\$480.00</b>	<b>\$449.00</b>

Board may be paid in three installments of \$67.00 each with a service charge of \$3.00.

The estimated fees for students in the professional College of Veterinary Medicine are shown below:

FULL TRIMESTER	FIRST TRIMESTER	SECOND TRIMESTER	THIRD TRIMESTER
Tuition	\$50.00*	\$ 50.00*	\$ 50.00*
Student Services	30.00	30.00	18.00
Building Use Fee	16.00	16.00	16.00
Property Deposit	10.00	—	—
Board Including Tax	171.00	171.00	58.00**
Room Rent (non air-conditioned) & Laundry	98.00	98.00	98.00
Room Deposit	20.00	—	—
Identification Card	1.00	—	—
<b>TOTAL</b>	<b>\$396.00</b>	<b>\$365.00</b>	<b>\$240.00</b>
Air-Conditioned Room, additional charge	40.00	40.00	40.00
<b>TOTAL</b>	<b>\$436.00</b>	<b>\$405.00</b>	<b>\$280.00</b>

Board may be paid in three installments of \$58.00 each with a service charge of \$3.00.

For additional information concerning expenses for students in the Texas Maritime Academy, see the Texas Maritime Academy section of the catalogue. All fees are payable in full at the beginning of the semester except board, which may be paid by installments. A \$1.00 service charge for each installment will be assessed. A \$1.00 charge per day, with a maximum of \$5.00, will be made on installment payments made after the due date. Students who are delinquent with installment payments for five days will be dropped from the rolls of the University.

#### EXPLANATION OF FEES

##### Tuition

The tuition fee, fixed by State law, is \$50.00 per semester for the Texas resident and \$200.00 per semester for the non-Texas resident. Payment of this fee entitles the student to register for 12 or more semester hours.

Former students who in either semester do not register on the days set apart for that purpose pay an additional fee of \$4.00.

The fee for courses audited or visited by students shall be the same as for courses for which credit is given.

##### Student Services

The student services fee is required of all students and covers the services at the University Hospital, Memorial Student Center, and the Intramural and Student Aid Programs; entitles the student to receive the Battalion Newspaper, the University Annual and the magazine published by the college in which the student is

\*The tuition fee for nonresident students is \$200.00 per semester.

\*\*This payment is for board through May 25. During the summer months students board at the University Cafeteria, and payment is not made in advance.

## Texas Maritime Academy

President, Texas A&M University.....	Earl Rudder, B.S., LL.D.
Superintendent.....	Bennett M. Dodson Master Mariner, Captain U. S. Navy (Retired), B.S.
Academic Assistant.....	Francis C. Tormollan, M.S.

### Board of Visitors

A 15-man Board of Visitors has been appointed by the Board of Directors of the Texas A&M University System to advise the President of Texas A&M University in matters concerning the Texas Maritime Academy. The members are prominent citizens from widely scattered areas of Texas with a large sprinkling of men distinguished in shipbuilding, steamship operations, port operations, and international commerce.

Rear Admiral Sherman B. Wetmore, USNR (Retired), Chairman.....	Galveston Ship Pilot and Community Leader
Captain Charles H. Glenwright, Vice Chairman.....	Port Arthur Marine Manager
John A. Parker, Secretary.....	Galveston Insurance Executive
C. Eugene DeFries.....	Houston Marine Engineers Beneficial Association
Captain John T. Everett, USMS, Maritime Administration.....	Washington, D. C. Supervisor, State Maritime Academies
Wayne C. Hall.....	College Station Academic Vice-President and Dean of Graduate College, Texas A&M University
Captain Thurman M. Gupton, USNR.....	West Columbia Eighth Naval District Representative: District Judge
Captain Ernest Hendrix.....	New Orleans Steamship Company Executive
Captain Robert L. Jones.....	Galveston President, Master Mates and Pilots Local
Emmett O. Kirkham.....	Galveston Shipyards Executive
Judge Peter J. La Valle.....	Texas City County Judge
Sam D. W. Low.....	Houston U. S. Collector of Customs
J. C. Rudd.....	Orange Marine Sales Manager
Captain Neal S. Storter.....	Brownsville Steamship Company Executive
Captain Wesley A. Walls.....	Corpus Christi Marine Surveyor

### THE TEXAS MARITIME ACADEMY

The Texas Maritime Academy was established in 1962 and is an integral part of Texas A&M University. It offers an opportunity for the high school graduate or college freshman to qualify as an officer in the U. S. Merchant Marine; earn

a commission as Ensign, United States Naval Reserve, Inactive; earn a Bachelor of Science degree in Marine Engineering or in Marine Transportation.

### COURSES OF STUDY

Two courses of study are offered — Marine Engineering and Marine Transportation. Each course consists of four years of college and professional education. Upon successful completion of the prescribed course of study and three sea training cruises, and upon passing the United States Coast Guard license examination for Third Mate or Third Assistant Engineer, the graduate will receive a Bachelor of Science degree from Texas A&M University in Marine Engineering or in Marine Transportation.

### ACADEMIC PROGRAM

The school year consists of two semesters in fall and spring for four years and three summer training cruises. The cruises are aboard the training ship Texas Clipper, a former passenger-cargo liner of 15,000 tons and 16 knots. Cruises are of about ten weeks duration and include visits to ports in Europe, the Mediterranean, South America, and the Pacific. Each year the cruise is scheduled to different parts of the world. Classes are conducted aboard ship, and each student performs duties which supplement theoretical studies ashore.

Classes for the freshman year are conducted at Texas A&M University campus at College Station. The last three years are spent at the Texas Maritime Academy campus at Galveston on the shores of the Gulf of Mexico. Classrooms and dormitories are modern and air-conditioned.

### CAREER OPPORTUNITIES

Career opportunities in this profession for well-educated and experienced young men are unlimited. A Third Officer may earn more than \$9,000 per year. A Chief Engineer or Master may earn \$18,000 and up a year. Past graduates of maritime academies are now in positions of president, vice president, or other key positions in steamship lines, ocean terminals, shipyards, international transportation agencies and are administrators in all branches of the maritime industry both at home and abroad.

### ADMISSION

In addition to meeting the general admission requirements for Texas A&M University as outlined on page 8, the applicant must be a United States citizen, physically fit, at least 17 years of age but less than 22 years of age on admission date, and unmarried and must agree to remain unmarried while enrolled.

### ADMISSION OF TRANSFER STUDENTS

Transfer students who have satisfactorily completed two semesters of freshman college courses may be accepted for admission in June. If acceptable, the student will be eligible to participate in the summer training cruise. Applicants who have completed one semester of college may be considered for admission in February. (See Admission of Transfer Students on page 10.)

### EXPENSES

Fees and expenses for the eleven-month program average about \$1,300 annually for Texas residents and \$1,750 for nonresidents. Included in these fees and expenses are tuition, student services, property deposit, room rent, room deposit, board plus tax, laundry (limited), textbooks and supplies, laboratory fees, uniforms, medical care, and summer cruise. Incidentals are not included.

### THE SPECIAL FRESHMAN CRUISE PROGRAM

Quite distinct and apart from the regular curriculum and training program is the special cruise program for freshmen. In this plan, high school graduates who are eligible for admittance to college are given an opportunity to make a cruise with the regular students. In this program the freshman is enrolled in the summer session of Texas A&M University, College of Liberal Arts. As a university student, he pursues two courses of his choice of those offered in English, mathematics and history. As a cadet, he becomes familiar with the sea and ships

through lectures and daily contact. As a visitor in foreign ports under the guidance of the faculty, he will mingle with people of other lands and will learn their cultures by visiting their cities and countryside.

A student who exhibits ability to do college level work and who demonstrates normal adaptability may choose to continue as a student in the Texas Maritime Academy, or he may elect to enter Texas A&M University or any other college or university to follow the major of his choice. The courses he has completed are transferable and are required in any college or university.

This program is made possible by the adaptation of a work-study program. Each student will attend classes in the mornings and afternoons. He will be assigned by faculty members to one of the ship's departments for the performance of assigned tasks. He will be required to observe mandatory study periods in his room each evening. Most of the assigned tasks are in the Steward's Department where he assists in food handling, cleaning of public rooms and staterooms or in operating the laundry. Those students who seek a major in engineering will be given an opportunity to carry out tasks in the engine room where they can learn a great deal of the plant operations. This experience will prove invaluable in the engineering classroom later on. Those who are more interested in navigation may be offered opportunities to work on the bridge and on deck under the supervision of one of the ship's officers.

It is not necessary that a student participate in the special freshman cruise program, but it is desirable because he learns very soon whether or not he is interested in the regular program. If he is not, he has lost nothing and has gained a great deal in preparing himself for college studies.

## TEXAS MARITIME ACADEMY BROCHURE

The Texas Maritime Academy publishes a brochure containing additional information. For this brochure and additional information, write to the Superintendent, Texas Maritime Academy, Texas A&M University, College Station, Texas. Interested students are welcome to visit the Texas Maritime Academy campus, 50th and Avenue U., Galveston, Texas.

### Curriculum in MARINE ENGINEERING

The Marine Engineering program leads to the degree of Bachelor of Science in Marine Engineering and to the U. S. Coast Guard issued license as Third Assistant Engineer, Steam and Motor Vessels, Ocean, Unlimited. Marine Engineering, which is closely related to mechanical engineering, emphasizes the design, operations, and maintenance of maritime power plants and associated equipment. Thorough preparation in mathematics, the sciences, and basic and applied engineering subjects is fundamental and necessary.

Engineering theory and practice are coordinated by relating classroom study to the student's practical experience aboard ship.

#### FRESHMAN YEAR

First Semester	Credit	Second Semester	Credit
Chem. 101 General Chemistry	4	Chem. 102 General Chemistry	4
E.G. 105 Engineering Graphics	2	E.G. 106 Descriptive Geometry	2
Engl. 103 Composition & Rhetoric	3	Engl. 104 Composition & Rhetoric	3
Hist. 105 History of United States	3	Hist. 106 History of United States	3
Mar.T. 101 Maritime Problems	1	Mar.E. 102 Maritime Problems	1
Math. 102 Algebra	3	Math. 103 Plane Trigonometry	3
P.E. 101	R	P.E. 102	R
	16		16

#### SOPHOMORE YEAR

Summer Session I (Ten weeks at sea in T/S Texas Clipper)			
Mar.E. 200 Basic Operations	4		
Mar.E. 203 Engineering Laboratory	2		
	6		

First Semester	Credit	Second Semester	Credit
Engl. 203 Introduction to Literature	3	Econ. 203 Principles of Economics	3
Mar.E. 201 Marine Engineering Mechanics	3	Math. 122 Calculus	4
Math. 121 Analytic Geometry & Calculus	4	N.S. 210 Naval Weapons	3
N.S. 209 Sea Power	3	N.S. 311 Navigation	3
Phys. 218 Mechanics & Heat	4	Phys. 219 Sound, Light, Electricity	4
P.E. 201	R	P.E. 202	R
	17		17

#### JUNIOR YEAR

Summer Session II (Ten weeks at sea in T/S Texas Clipper)			
H.E. 216 First Aid	1		
Mar.E. 204 Engineering Laboratory	2		
Mar.E. 300 Intermediate Operations	4		
	7		

Govt. 206 American National Government	3	Mar.E. 304 Marine Thermodynamics	3
Mar.E. 303 Marine Thermodynamics	3	Mar.E. 305 Strength of Materials	3
Mar.E. 307 Electrical Circuits	4	Mar.E. 308 Electrical Machinery	4
Math. 307 Calculus	3	Mar.E. 401 Nuclear Propulsion I	3
Naut. 201 Naval Architecture I	3	Math. 308 Differential Equations	3
	16	Naut. 202 Naval Architecture II	2
			18

#### SENIOR YEAR

Summer Session III (Ten weeks at sea in T/S Texas Clipper)			
Mar.E. 302 Engineering Laboratory	1		
Mar.E. 400 Advanced Operations	4		
Mar.E. 406 Engineering Repairs	2		
	7		

Econ. 318 Economics of Labor	3	Mar.E. 306 Mar. Refrigeration & Air Cond.	3
Mar.E. 301 Fluid Mechanics & Heat Transfer	3	Mar.E. 402 Diesel Engineering	3
Mar.E. 405 Steam Generators	3	Mar.E. 403 Marine Steam & Gas Turbines	3
Mar.E. 408 Nuclear Propulsion II	3	Mar.E. 414 Ship Automation	3
N.S. 310 Naval Operations	3	Mar.E. 415 Nuclear Propulsion III	3
N.S. 410 Principles of Leadership	3		16
	18		

### Curriculum in MARINE TRANSPORTATION

The department provides a basic program for deck officer candidates. This program will have a major in the field of Marine Transportation. It is designed to combine the humanities and sciences with maritime subjects to achieve a well-rounded college curriculum which will fully equip a young man to meet the present and future needs of the maritime industry afloat and ashore.

Theory and practice are integrated by relating the scholastic efforts of the academic year to those of the sea training periods in the training ship.

The student who successfully completes the courses required by this curriculum, and after passing the required U. S. Coast Guard examination, receives the degree in Bachelor of Science in Marine Transportation and a federal license as Third Mate in the Merchant Marine.

#### FRESHMAN YEAR

Chem. 101 General Chemistry	4	Engl. 104 Composition & Rhetoric	3
E.G. 105 Engineering Graphics	2	Geog. 201 World Regional Geography	3
Engl. 103 Composition & Rhetoric	3	Hist. 106 History of United States	3
Hist. 105 History of United States	3	Mgmt. 105 Introduction to Business	3
Mar.T. 101 Maritime Problems	1	Mar.E. 102 Maritime Problems	1
Math. 102 Algebra	3	Math. 103 Plane Trigonometry	3
P.E. 101	R	P.E. 102	R
	16		16

## SOPHOMORE YEAR

## Summer Session I

(Ten weeks at sea in T/S Texas Clipper)

Naut. 200	Bas. Commun., Nav., & Seamanship	4
Naut. 203	Seamanship I	3
		<hr/> 7

First Semester	Credit	Second Semester	Credit
Engl. 203 Introduction to Literature	3	Econ. 203 Principles of Economics	3
Math. 106 Spherical Trigonometry	3	Span. 106 Beginning Spanish	3
Span. 105 Beginning Spanish	3	Naut. 303 Celestial Navigation	3
Naut. 204 Terrestrial Navigation	3	N.S. 210 Naval Weapons	3
N.S. 209 Sea Power	3	Phys. 211 Brief Survey of Physics	4
P.E. 201	R	P.E. 202	R
	<hr/> 15		<hr/> 16

## JUNIOR YEAR

## Summer Session II

(Ten weeks at sea in T/S Texas Clipper)

H.E. 216	First Aid	1
Naut. 300	Interm. Commun., Nav., & Seamanship	4
Naut. 301	Seamanship II	3
		<hr/> 8

Govt. 206 American National Government	3	Engl. 301 Writing for Professional Men	3
Mar.T. 301 Ocean Transportation I	4	Hist. 318 Intern. Developments Since 1918	3
Span. 206 Intermediate Spanish	3	Span. 206 Intermediate Spanish	3
Naut. 201 Naval Architecture	3	Naut. 202 Naval Architecture II	2
Naut. 302 Seamanship III	2	Naut. 304 Electronic Navigation	3
N.S. 309 Naval Machinery	3	N.S. 310 Naval Operations	3
	<hr/> 18		<hr/> 17

## SENIOR YEAR

## Summer Session III

(Ten weeks at sea in T/S Texas Clipper)

Naut. 400	Adv. Commun., Nav., & Seamanship	4
Naut. 401	Seamanship IV	3
		<hr/> 7

Econ. 318 Economics of Labor	3	Econ. 321 Intern. Trade & Finance	3
Mar.T. 302 Marine Cargo Operations I	3	Mar.T. 402 Ocean Transportation III	4
Mar.T. 304 Ocean Transportation II	3	Mar.T. 406 Marine Cargo Operations II	3
Met. 302 Weather Rep. & Forecasting	3	Naut. 404 The Navigator	3
N.S. 410 Principles of Leadership	3	Ocn. 403 Tides, Waves, Currents, Ice	3
	<hr/> 15		<hr/> 16

## COURSES OF INSTRUCTION BY DEPARTMENTS

All courses offered in the University are described on the following pages and are listed by departments, arranged alphabetically.

The course numbering scheme is as follows:

- 101 to 199, courses primarily open to freshmen.
- 201 to 299, courses primarily open to sophomores.
- 301 to 399, courses primarily open to juniors.
- 401 to 599, courses primarily open to seniors.
- 601 to 699, courses primarily open to graduates.

Figures in parentheses following the number of the courses indicate the clock hours per week devoted to theory and practice, respectively. Theory includes recitations and lectures; practice includes work done in the laboratory, shop, drawing room, or field. The unit of credit is the semester hour, which involves one hour of theory, or from two to four hours of practice per week for one semester of eighteen weeks.

Roman numerals to the right of the credit value of each course indicate the semester in which it is regularly offered. The letter "S" denotes summer offerings.

Any course may be withdrawn from the session offerings in case the number of registrations is too small to justify the offering of the course.

## Department of Marine Engineering

Associate Professors Dahm, Enstice (Acting Head), Tormollan;  
Assistant Professor Mercer; Instructor French; Lecturers Brod, Moore

## 102. Orientation. (0-2). Credit 1. I

Introduction to basic marine engineering systems. General description of ship-building industry related to steamship industry. Career of engineer officer surveyed.

## 200. Basic Operations. Credit 4. S

Represents practical application of student's classroom studies while at sea in training ship during sea training period. Student required to complete several projects relating to engineering plant of ship.

## 201. Marine Engineering Mechanics. (3-0). Credit 3. I

Application of principles of mechanics to elementary problems of marine engineering design. Topics include: forces and couples, analysis of structures and friction; principles of kinetics and kinematics.

## 203. Engineering Laboratory. (1-3). Credit 2. I

Study of pipe and valve standards; packing and gasket material; gearing and bearings; use of brass and copper service tubing; silver brazing techniques; corrosion controls in heat exchangers.

## 204. Engineering Laboratory. (1-3). Credit 2. II

Academic and practical study of various marine power systems in use today and some future developments. Visits to various ships in Galveston harbor and to local shipyard will be scheduled.

## 300. Intermediate Operations. Credit 4. S

Training program for second sea training period. Sea projects required of each student under supervision of officer-instructors. Lifeboat and safety training included.

## 301. Fluid Mechanics and Heat Transfer. (3-0). Credit 3. I

Application of principles of fluid statics and dynamics to marine engineering problems. Study of fundamental laws relating to heat flow; characteristics of pumps; topics in compressible flow.

## 302. Engineering Laboratory. (0-3). Credit 1. II

Demonstration of basic concepts of fluid mechanics; calibration of flow meters, centrifugal pumps, orifice and weir flow. Additional practice given in principles and operations of power machinery.

## 303. Marine Thermodynamics. (3-0). Credit 3. I

Energy concepts. First and second law of thermodynamics. Carnot and Rankine principles and reversible heat cycles. Properties and processes of vapors; vapor power cycles and vapor refrigeration cycles.

## 304. Marine Thermodynamics. (3-0). Credit 3. II

Properties and processes of perfect gases, gas compression cycles, gas power cycles, air refrigeration cycle, and processes involving mixture of gases and vapors.

## 305. Strength of Materials. (3-0). Credit 3. II

Fundamental principles underlying analysis and design of machine members subjected to various combinations of loading. Emphasis given to theoretical and empirical basis for material specification formulas as found in United States Coast Guard Marine Engineering Regulations.

## 306. Marine Refrigeration and Air Conditioning. (2-2). Credit 3. II

Theory and practice of mechanical refrigeration. Specific topics include: thermodynamics of Reverse Carnot cycle, vapor compression cycles; thermal, physical, and chemical properties of refrigerants. Descriptions of shipboard ventilation and air conditioning.

**301. Ocean Transportation I. (4-0). Credit 4. I**

Concerned with shipping in world economy; production of service, including shipping process, equipment, labor, conferences, rate-making, role of government; buying of service by shipper; finance of shipping; and international conventions and treaties.

**302. Marine Cargo Operations I. (2-2). Credit 3. I**

Essential requirements and problems in stowage and carriage of general and bulk (dry and liquid), refrigerated, and special cargos. Theoretical and practical problems in receiving, stowing, securing, transporting, and discharging all types of cargo.

**304. Ocean Transportation II. (3-0). Credit 3. II**

Concerned with carriage of goods under bills of lading and charter parties; terminal management and operation and types of carriers. Pertinent sections of American and British Shipping Laws are thoroughly studied. Prerequisite: Mar.T. 301.

**402. Ocean Transportation III. (4-0). Credit 4. III**

Covers essential principles of Admiralty and Maritime Law; advanced principles of marine insurance. Takes up in detail standard forms and Institute Clauses. Attention paid to nuclear maritime insurance activities. Principles of International Law are discussed. Prerequisite: Mar.T. 304.

**406. Marine Cargo Operations II. (2-2). Credit 3. II**

Stowage of special cargoes; ship's papers; entry and clearance procedures are covered. Laboratory work consists of problems involving research and planning. Each student will complete project related to shipping process.

**NAUTICAL SCIENCE****200. Basic Communications, Navigation, and Seamanship. Credit 4. S**

Practical application of student's classroom studies aboard training ship during first training cruise. Student completes basic projects in communications, navigation, and seamanship.

**201. Naval Architecture I. (3-0). Credit 3. I**

Description of ship as self-sustaining unit; shipbuilding nomenclature and dimensions, types of construction and classification of merchant ships; classification societies; shipbuilding materials and methods, and structural components of ship.

**202. Naval Architecture II. (2-0). Credit 2. II**

Ship's lines drawing and form calculations; principles of flotation and buoyancy; inclining experiments, free liquids, transverse stability; motion of ships in waves, seaway and dynamic loads; ship structure tests.

**203. Seamanship I. (2-3). Credit 3. I**

Art of handling small boats under oars, sail, and power. Lifeboat launching and equipment; construction and types of boats. Application of ground tackle, knotting and splicing, blocks and tackle. Communications practice; Rules of Nautical Road.

**204. Terrestrial Navigation. (2-2). Credit 3. I**

Fundamentals of basic navigation with definitions; plane sailing, middle latitude sailing, and mercator sailing; piloting, charting projections, chart navigation.

**300. Intermediate Communications, Navigation, and Seamanship. Credit 4. S**

Practical application of student's classroom studies aboard training ship during second training cruise. Student completes intermediate projects in communications, navigation, and seamanship.

**301. Seamanship II. (2-3). Credit 3. I**

Mechanical appliances on shipboard; heavy lifts; accident prevention. Marine inspection laws and communications.

**302. Seamanship III. (1-3). Credit 2. II**

Qualifying tests in communications. Thorough study made of U. S. Public Health requirements in first aid and ship sanitation. Marine inspection rules for safety at sea are stressed.

**303. Celestial Navigation. (2-3). Credit 3. I**

Survey of nautical astronomy, use of nautical almanac, sextant, compass error, and several short tabulated methods of solving the astronomical triangle are covered. Study of navigator's work at sea.

**304. Electronic Navigation. (2-2). Credit 3. II**

Study of theory, methods, and application of determining position by means of electronic aids including radar, direction finder, and Loran. Student examined by U. S. Coast Guard for certification as Radar Observer.

**400. Advanced Communications, Navigation, and Seamanship. Credit 4. S**

Represents practical application of student's classroom studies aboard training ship during third training cruise. Student completes advanced projects in communications, navigation, and seamanship.

**401. Seamanship IV. (2-3). Credit 3. II**

Principles and methods of propulsion and steering of ships. Ship handling in heavy seas, docking, undocking, anchoring, mooring, towing, salvage, and ice seamanship. Damage control stressed. Qualification examinations are held in seamanship and communications.

**404. The Navigator. (2-3). Credit 3. II**

Exercises in day's work of navigator at sea. Planning routes of voyages. Study made of buoyage systems used throughout world and survey made of various sailing guides and port directories. Gyroscope compass fundamentals and magnetic compass compensation.

**Department of Naval Science****UNITED STATES NAVY**

Associate Professor: Lieutenant Hale (Head); Assistant Professors: Lieutenants (jg) Priest, Sanders; Instructors Anderson, Berryman

The Naval Science Department administers prescribed naval subjects within academic standards set by the Chief of Naval Personnel. Each cadet who completes the naval science courses and is otherwise qualified becomes eligible for, and may be granted, an inactive commission as Ensign, U. S. Naval Reserve, upon graduation.

The objectives of the Naval Science Department are to provide the cadet with a well-rounded course in basic naval subjects; to develop an understanding of naval science and a knowledge of naval practice; and to develop, by precept and example, the psychology and technique of leadership.

Courses are offered at the Galveston campus of the Texas Maritime Academy only.

**208. Naval Orientation. (3-0). Credit 3. I**

Study of naval organization, customs, shipboard organization, types and characteristics of naval vessels, general concepts of naval warfare, and introduction to naval history and sea power.

**209. Sea Power. (3-0). Credit 3. I**

Naval history and appreciation of contribution of sea power to past, present, and future progress of United States, stressing influence of sea power on global history.

**210. Naval Weapons. (3-0). Credit 3. II**

Introduction to naval weapons to familiarize student with nomenclature and types of weapons including practical integration of modern weapons systems in the fleet today.

**309. Naval Machinery. (3-0). Credit 3. I**

Offered to deck cadets to afford basic understanding of ship stability, naval engineering including main propulsion plants (steam, nuclear, and internal combustion) with emphasis on fundamental principles.

**310. Naval Operations. (3-0). Credit 3. II**

Acquaints student with those responsibilities which face him in shipboard operations such as relative motion, tactical communications and instructions, and rules of nautical road required for basic qualification in bridge and CIC watch billets afloat.