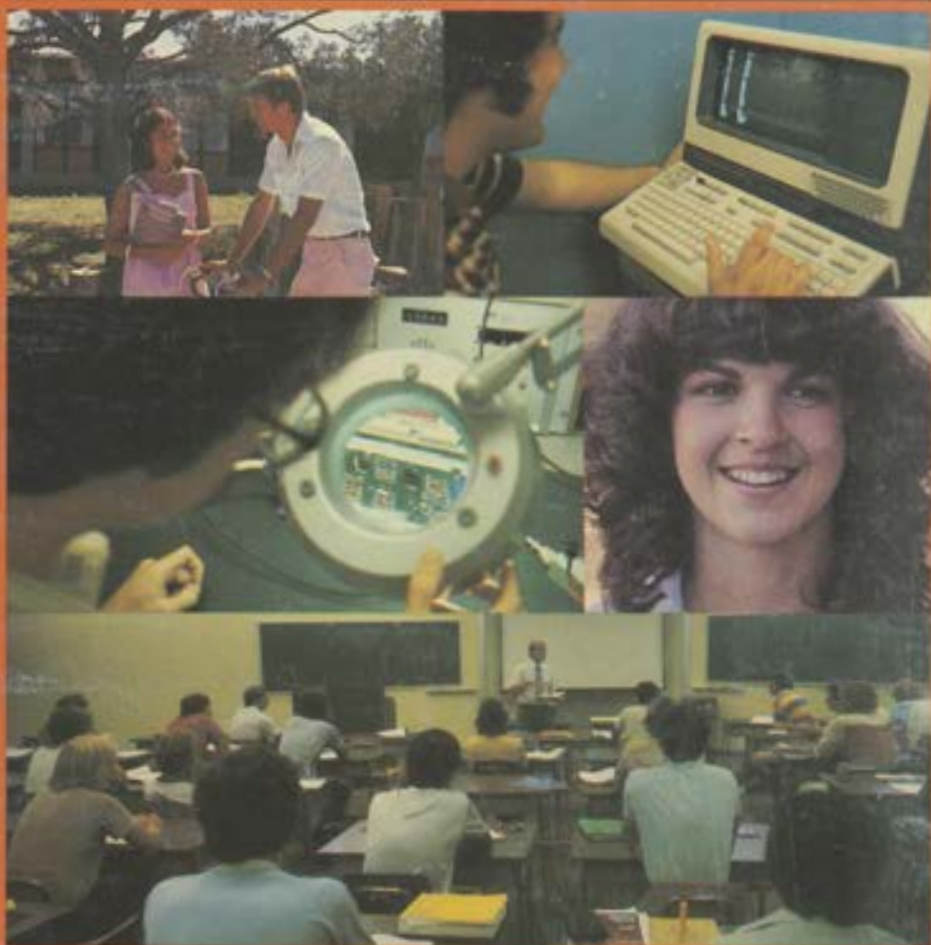


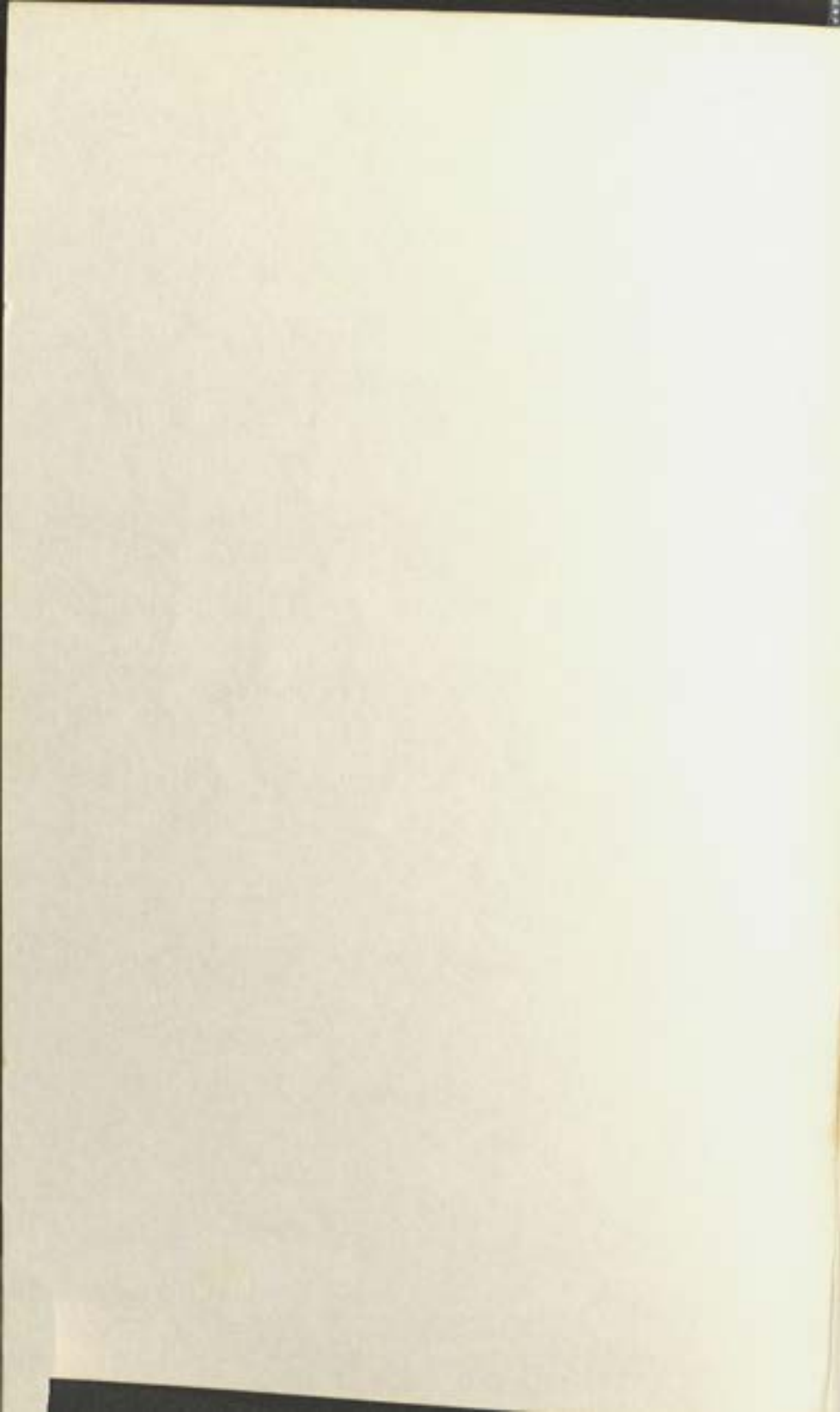
Embry-Riddle Aeronautical University

PERSONAL COPY OF

General Catalog 1980-1981



Prescott, Arizona
Daytona Beach, Florida
International Campus



Serving the World of Aviation through Higher Education for more than 50 years

MAIN CAMPUS

Embry-Riddle Aeronautical University
Star Route Box 540
Bunnell, FL 32010
1-800-874-0972

WESTERN U.S. CAMPUS

Embry-Riddle Aeronautical University (West)
Prescott Campus
Prescott, Arizona 86302
(602) 778-4130

INTERNATIONAL CAMPUS

Embry-Riddle Aeronautical University
Star Route 540
Bunnell, FL 32010
1-800-874-0972

EASTERN U.S. CAMPUS

Embry-Riddle Aeronautical University (East)
Daytona Beach Campus
Daytona Beach, Florida 32014
(904) 252-5561

In Europe contact:

HQ USAFE/DPPEF
Embry-Riddle Aeronautical University
APO New York 90633
Telephone Number—
Wiesbaden Civilian: 06121-810608
Wiesbaden Military: 3723

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Embry-Riddle Chapter I

Aeronautical University

General Information



MESSAGE FROM THE PRESIDENT

... If you have the will and are accepted for admission, your attendance at Embry-Riddle Aeronautical University can be the way to enter one of the many exciting, rewarding, and contributive careers in aviation. **MOTIVATION** and **SELF-DISCIPLINE** are keys to success in the aviation field.

MOTIVATION removes mountains of personal doubt and levels the hills of irrational fears to molehill proportions. **SELF-DISCIPLINE** is an absolute requirement because successful aviation careers demand a high degree of discipline. Ask any family member or friend who earns a living in the aviation field and you'll learn that an aviation career involves continual education and re-training.

At this time, whether you have decided to strive for your Associate in Science, Baccalaureate in Science, or Master's degree, in the aviation program of your choice, is not important. Whether you have decided to undertake this work at the Daytona Beach, FL *Eastern Campus*, Prescott, AZ *Western Campus* or at any of the 80 locations of the *International Campus*, also does not matter. What is important is that you understand that there is no shortcut to success. Success at Embry-Riddle demands a planned, systematic approach to your studies.

Our faculty and staff are here to help you in every way possible, but whether you succeed or fail is up to you. We are proud of our aviation degree programs, of our facilities, and of our faculty and staff. The Embry-Riddle reputation for offering the finest in aviation higher education is acknowledged worldwide. But you will get out of your education only what you put into it. *You* are the one who must ask questions in class. *You* are the one who must make your personal contributions to each class which you attend. No one else can do it for you.

Good luck with your studies.



Aeronautically,

Jack R. Hunt
President

UNIVERSITY POLICIES

In keeping with its belief that education is a tool that should be available to all desiring to enhance themselves, Embry-Riddle Aeronautical University (E-RAU) exercises an open admission policy. Each application for admission will be evaluated on an individual basis.

Embry-Riddle adheres to the principle of equal education and employment opportunity without regard to race, sex, color, creed, or national origin. This policy extends to all programs and activities involving or supported by the University.

Embry-Riddle does not discriminate on the basis of handicap in the recruitment and admission of students, the recruitment and employment of faculty and staff, and the operations of any of its programs and activities, as specified by federal laws and regulations. The designated coordinator for compliance with Section 504 of the Rehabilitation Act of 1973, as amended, is Dr. Jeffrey H. Ledewitz, Vice President of Student Affairs.

The University reserves the right to adjust tuition and fees when necessary in order to maintain its educational standards.

This catalog is designed for use during a one-year period. The dynamic nature of aviation education is such that curriculum and other matters mentioned herein may require changes within that period. Accordingly, the contents of this catalog are subject to change without notice.

DIMENSIONS OF AVIATION

Career opportunities in both the national and international aviation industry sectors continue to multiply. The following outlines some statistical data for major segments of the aviation industry, including projections into the 1980s.

General Aviation

The Federal Aviation Administration (FAA) and General Aviation Manufacturers' Association (GAMA) report that in 1979 there were 844,100 licensed pilots in the United States of America. Of these, 363,000 held Private licenses, 198,800 had Commercial licenses, 241,900 pilots had Instrument Ratings, and 52,300 had Air Transport Ratings. GAMA reports that 200,000 aircraft were active in the general aviation sector in 1979. A total of 18,180 new aircraft, valued at \$2.1 billion, were delivered. The FAA forecasts that there will be 310,000 aircraft in operation in general aviation by 1990.

Commercial Airline Aviation

According to the Air Transport Association (ATA), 2,263 commercial airliners were in operation in 1978. These transports carried 274,719,000 passengers, an increase of 17.4 percent over 1977. ATA forecasts that over 300 million passengers will fly in 1979. New aircraft on order for 1979, 1980 and 1981 total 452 as the airlines continue to modernize their fleets and expand. Freight traffic also increased. In 1978, over 5.7 billion tons were transported—up seven percent over 1977. Freight revenues were \$1.9 billion.

Military Aviation

Each of the military services maintains aviation components of considerable complexity. Federal budgets for aircraft and material acquisition, training, maintenance, operations and personnel are large and increasing to insure that the aviation portions of national defense are professionally maintained.

Aerospace Industry

Reports from the Aerospace Association in Washington, D. C., reveal that 1978 sales totaled \$37.4 billion and aerospace employment increased to 967,000. The aerospace industry reports capital expenditures of \$1.5 billion in 1979 to keep pace with this heavy growth.

In Summary

Deregulation of the airline industry in 1979 resulted in substantial increases in passenger and freight traffic. The commuter/air taxi segment of the air transportation business increased enormously. Both of these changes created a heavy demand for additional employees. Computer technology and avionics technology continue to remain in the forefront as the aviation industry looks to its needs for the 1980s.

Industry demand for young, aviation-educated professionals continues to grow as evidenced by the above statistical data. The competition is keen for initial employment at entry level positions. Individuals identifying aviation careers as their objectives must prepare themselves not only for the competition for these entry level positions but also for competition for rewarding assignments and promotion once they are employed.

The FAA reports that the average age of licensed airline maintenance personnel is 57, so the next few years will probably see extraordinary demand for replacements.

Embry-Riddle believes that it provides the finest preparation possible for entry into the aviation career field. In the following pages, you will become acquainted with the University and its academic programs.

EMBRY-RIDDLE AND AVIATION

A University Like No Other

Embry-Riddle Aeronautical University is unique among accredited higher education institutions. It is the world's only *totally aviation-oriented* university. Since its founding more than half a century ago, Embry-Riddle has devoted itself exclusively to providing the finest, most comprehensive professional aviation education leading to hundreds of aviation career opportunities. E-RAU alumni now pursue aviation careers in government, private industry, and the various branches of the military throughout the United States and around the world. E-RAU has three major campus units—an Eastern Campus at Daytona Beach, Florida; a Western Campus at Prescott, Arizona; and an International Campus, which extends from Hawaii to Europe at some 80 resident centers. (For further information see p. 179 of this Catalog.)

Outlook for the 1980s

Aviation plays a key role in world transportation. Beginning in the 1980s, aviation manpower and aircraft requirements are predicted to rise sharply as the demand grows for air services of all kinds. U.S. and international airlines are expanding to meet this demand. General aviation in this country is expected to experience rapid growth and is already 10 times the size of scheduled airline operations in terms of numbers of flights and numbers of aircraft. All flight operations must be supported by a broad base of supervisory management, maintenance and technical skills. Because of this, the aviation industry will seek both technically and academically qualified personnel to meet the growth of the 1980s.

Embry-Riddle, Now and Beyond

Today, Embry-Riddle's more than 7,500 students are enrolled in associate, bachelor's and master's degree programs, as well as a variety of FAA certificate programs. Students select from over 20 degree programs leading toward careers in all facets of aviation.

Embry-Riddle's campus facilities at Daytona Beach and at Prescott are established especially to provide for the student's educational needs. The Daytona Beach Campus includes 86 acres located directly on the Daytona Beach Regional Airport. The Prescott Campus is only two miles from the Prescott Airport and has 510 acres. Both the Daytona Beach and Prescott campuses provide assistance to students in locating housing. The Daytona Beach Campus has on-campus housing for some 900 students while Prescott handles 300 in its on-campus facilities. Thus, over one-half to three-quarters of the total student body live in off-campus apartments and homes. Plans are under way to provide additional on-campus student housing at the Prescott Campus by Spring of 1981.

The International Campus consists of a network of resident centers situated in active aviation communities throughout the United States and Europe. Many of the students attending Embry-Riddle at International Campus locations already work in an aviation or aviation-related position but seek an aviation-oriented degree to aid in their career development.

Accreditations and Affiliations

Embry-Riddle Aeronautical University is accredited by the Southern Association of Colleges and Schools. Bachelor's degree programs in Aeronautical Engineering at the Daytona Beach Campus are accredited by the Accreditation Board for Engineering and Technology (ABET), the national engineering accrediting agency (formerly the Engineers Council for Professional Development). ABET accreditation for the Aeronautical Engineering program at Prescott must await graduation of students through the program, according to ABET rules and procedures. This same procedure was complied with when E-RAU established the Aeronautical Engineering program at Daytona Beach. Embry-Riddle will seek the additional ABET accreditation as soon as the graduating student criterion is met. Upon approval, the ABET accreditation is made *retroactive*, covering each of the students who achieved graduate status. The University anticipates no difficulty in obtaining ABET approval. FAA approved programs include Maintenance Technology (Airframe and Powerplant) and Flight Technology (Private, Commercial, Instrument, Multi-Engine, Flight Instructor and Instrument Flight Instructor).

Academic programs are approved for veterans training benefits by all states in which they are offered.

The University retains membership in organizations including the National Collegiate Athletic Association, American Institute of Aeronautics and Astronautics, National Business Aircraft Association, University Aviation Association, National Aerospace Education Association, National Air Transportation Associations, and the American Society for Engineering Education.

Philosophy and Purpose

We at Embry-Riddle accept as our responsibilities:

The educational task of fully preparing students for professional careers in aviation.

The industrial task of maintaining close liaison with all elements of the aviation industry to help insure relevant academic programs.

The personal task of providing knowledgeable, well-rounded citizens and community leaders.

The University's purpose is summed up in the following seven objectives:

1. To prepare students to make effective contributions to aviation and to be immediately productive.
2. To develop within each student the ability to evaluate objectively the economic, political and moral aspects of man and society.
3. To provide the facilities, faculty and staff for the professional and educational climate needed to inspire students to be inquisitive, professional and skilful in their chosen aviation fields.
4. To maintain the highest standards for professional aviation-oriented educational programs.
5. To conduct a continuous and meaningful reevaluation of educational courses and programs.
6. To instill in students a keen awareness of themselves and their society through instruction in the humanities and social sciences.
7. To support and promote research activities designed to increase understanding in all areas of aviation higher education.

International Students

Embry-Riddle is truly an international university. Students from 47 countries attend E-RAU classes. The foreign students comprise 12 percent of the total E-RAU student body and constitute another important element in the total educational exposure for students. Aviation is an international business and the University faculty and staff believe that the mixing of U.S. and international students is a valuable experience for all.

Women in Aviation

Today, aviation and aerospace companies and government agencies actively seek qualified, female professionals in aviation. The commercial airlines, in particular, seek women with the required professional credentials. In line with this, Embry-Riddle invites women applicants to prepare themselves for these exciting careers.

Academic Calendar 1980-82

FALL TRIMESTER 1980

August 25-30	Orientation for new students
August 27-29	Registration
September 1	Classes begin
September 3	Last day for late registration and adding classes
November 27-28	Holiday—Thanksgiving
December 11	Last day of final examinations
December 13	Commencement
December 19	End of Fall Term—Last day of flight courses

SPRING TRIMESTER 1981

January 3-5	Orientation for new students
January 4-5	Registration
January 6	Classes begin
January 8	Last day for late registration and adding classes
April 16	Last day of final examinations
April 17	Holiday—Good Friday
April 18	Commencement
April 24	End of Spring Term—Last day of flight courses

SUMMER TRIMESTER (TERM A) 1981

April 29-May 2	Orientation for new students
April 30-May 1	Registration for Terms A, B and full Trimester
May 4	Classes begin
May 6	Last day for late registration and adding classes
May 25	Holiday—Memorial Day
June 23	Last day of final examinations

SUMMER TRIMESTER (TERM B) 1981

June 22	Orientation for new students
June 23	Registration for Term B
June 24	Classes begin
June 26	Last day for late registration and adding classes
July 4	Holiday—Independence Day
August 13	Last day of final examinations
August 15	Commencement
August 21	End of Summer Term—Last day of flight courses

FALL TRIMESTER 1981

August 24-29	Orientation for new students
August 26-28	Registration
August 31	Classes begin
September 2	Last day for late registration and adding classes
November 26-27	Holiday—Thanksgiving
December 10	Last day of final examinations
December 12	Commencement
December 18	End of Fall Term—Last day of flight courses

SPRING TRIMESTER 1982

January 4-6	Orientation for new students
January 5-6	Registration
January 7	Classes begin
January 11	Last day for late registration and adding classes
February 22	Holiday—Washington's Birthday
April 9	Holiday—Good Friday
April 22	Last day of final examinations
April 24	Commencement
April 30	End of Spring Term—Last day of flight courses

SUMMER TRIMESTER (TERM A) 1982

May 5-8	Orientation for new students
May 6-7	Registration for Terms A, B and full trimester
May 10	Classes begin
May 12	Last day for late registration and adding classes
May 31	Holiday—Memorial Day
June 29	Last day of final examinations

SUMMER TRIMESTER (TERM B) 1982

June 28	Orientation for new students
June 29	Registration for Term B
June 30	Classes begin
July 2	Last day for late registration and adding classes
July 5	Holiday—Independence Day
August 19	Last day of final examinations
August 21	Commencement
August 27	End of Summer Term—Last day of flight courses

Embry-Riddle Chapter II **Aeronautical University**

Admission to the University



ADMISSION TO THE UNIVERSITY

GENERAL REQUIREMENTS

I. TO APPLY FOR ADMISSION, APPLICANTS SHOULD:

1. Obtain an application for admission from:

Dean of Admissions
Embry-Riddle Aeronautical University
Main Campus
Star Route Box #540
Bunnell, FL 32010

For admission to programs at International Campus locations, contact the local Resident Center Director.

2. Complete the application, and send it to the University Admissions Office with the non-refundable application fee of \$25 at least 60 days* prior to enrollment.
3. Arrange for an official copy of high school academic records or General Education Development Tests (GED) (scores of 40 or higher in each subject area and an average score of 45 on all five tests are acceptable) to be forwarded directly to the University Admissions Office.
4. Complete the E-RAU Medical Report, and return it to the University Admissions Office a minimum of 30 days before enrollment.
5. Arrange for high school or the ACT or SAT testing agency to forward scores to the University Admissions Office a minimum of 30 days prior to enrollment.
6. Flight training candidates only—must obtain an FAA Medical Certificate (Class I or II) from an FAA approved examiner and send a copy of it to the University Admissions Office a minimum of 30 days prior to enrollment.

II. ONCE APPROVED, THE APPLICANT SHOULD:

Submit a \$150 advance tuition deposit† to the University Admissions Office within 30 days of notification of approval. (Orientation and registration instructions will be mailed to applicants 30 days prior to the dates established for orientation.)

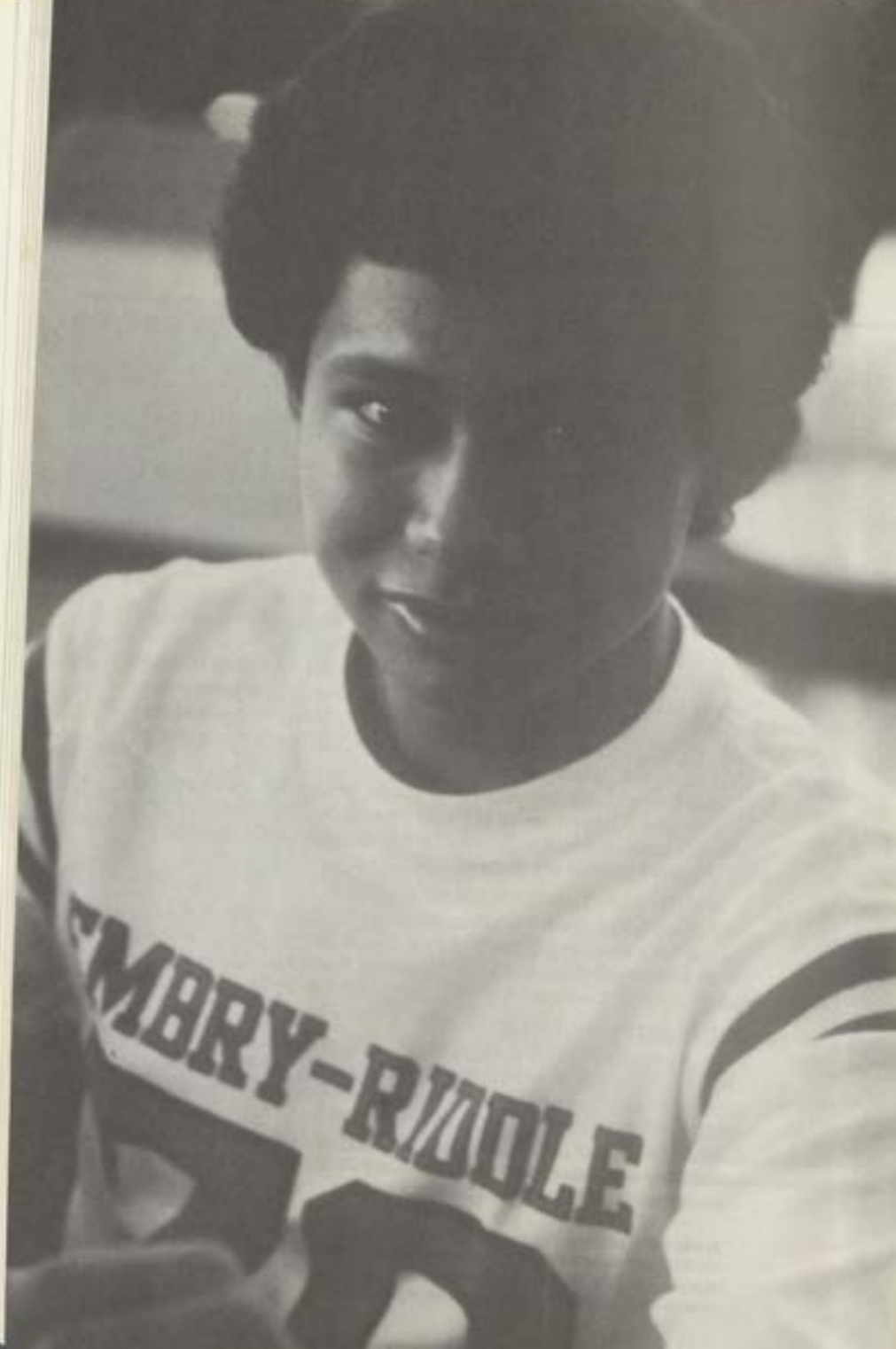
III. HANDICAPPED STUDENTS:

In addition to the regular admission procedure, Embry-Riddle requests the opportunity to meet handicapped applicants on campus so they can be assured that the campus facilities are adequate to meet personal needs.

Answers in regard to the handicapped are voluntary only, and they are intended to be used only in facilitating specific arrangements, if any should be necessary.

*Applications received fewer than 60 days prior to trimester will be processed but students can expect delays in date of admission and enrollment.

†Refundable, provided the student notifies E-RAU by letter postmarked 60 days prior to the student's first intended date of enrollment.



EMBURY-RIDDLE

REQUIREMENTS FOR INTERNATIONAL STUDENTS*

1. Items 1, 3, 4 and 5 of General Requirements (previously listed) apply.
2. In addition, international student applicants should:
 - (a) submit their applications for admission with a \$50 application fee (non-refundable) 180 days prior to trimester.
 - (b) submit their photographs (passport size 2½ x 2½).
 - (c) submit official detailed transcripts of college records, if applicable.
 - (d) consult the U.S. Consulate or Embassy in their country of residence and arrange to take the Test of English as a Foreign Language (TOEFL) directly from the U.S. Consulate or Embassy testing center. The Admissions Office must receive results of TOEFL before a decision concerning admission will be made. A minimum score of 500 is required.
 - (e) Furnish a completed E-RAU International Student Personal and Financial Statement form. The financial statement is an important factor in determining the acceptability of an applicant.
 - (f) Submit an advance deposit of \$3,000 U.S. dollars upon receipt of notification of acceptance for enrollment. \$2,400 will apply toward tuition and living expenses during the initial term of enrollment and \$600 will be utilized only if an emergency arises, such as medical expenses, return trip home, etc. If not used, the \$600 will be refunded upon completion of the student's program. The \$3,000 advance deposit *must* be received by the Admissions Office before the letter confirming enrollment is sent and the Certificate of Eligibility (Form I-20) is issued.
 - (g) Present the Certificate of Eligibility to the U.S. Embassy or Consulate to obtain a visa for entry into the United States. The I-20 *must* be in the student's possession prior to departure from home country.

NOTE: A change of U.S. immigration status from tourist visa (or other) is not possible after the student's arrival at the University.

*International Students refers to students who require an I-20 form to enter the United States.

SPECIAL SERVICES FOR INTERNATIONAL STUDENTS

1. **PERSONALIZED SERVICES**—Individuals are available primarily to assist international students in obtaining non-university related off-campus services such as, locating an apartment and negotiating the lease, opening bank accounts and reviewing banking procedures incident to a particular bank, securing telephone and other utility services including deposit requirements and payment rules, purchasing new or used automobiles, assisting at a medical doctor or dentist appointment, opening department store charge accounts, assistance in obtaining an automobile driver's license, etc.

Fee Charge—\$10/hour.

NOTE: All arrangements for Personalized Services must be scheduled via the International Student Services Office. The preceding services listed are additional to those routinely provided to all International Students.

2. **MONTHLY MONEY MANAGEMENT**—The E-RAU Accounting Department will hold and disburse monies to students on a pre-agreed schedule with student sponsors and/or parents. This service includes not only the monthly issuance of checks to the designated student(s), but also the maintenance of account, including periodic reporting of the account status to the sponsor. Special rules can be established with the sponsor concerning account handling including emergency advances of cash and repayable loans, etc.

Fee Charge—\$50/month per student.

3. **MONTHLY PROGRESS REPORT**—An individual narrative progress report will be sent monthly to sponsors and/or parents of international students.

Fee Charge—\$25/month per student.

TRANSFER STUDENT REQUIREMENTS

1. All General Requirements (previously listed) apply.
2. Arrange for copy of official transcripts to be mailed to the University Admissions Office from all other previously attended accredited institutions of higher education. Transcripts must be received directly from the Registrar of each such institution.
3. If requested, present the catalog(s) from each institution attended to the Admissions Office. Catalog(s) should be marked to indicate courses satisfactorily completed.

TRANSFER CREDIT

1. Transfer credit may be granted under the following provisions:
 - (a) The student is in good academic standing with the institution last attended. Or, if admitted on probation, the student will be granted transfer credit in accordance with University policy upon removal from probation at Embry-Riddle.
 - (b) Only courses completed with a grade of "C" or better are transferable. Courses with a grade of "D" may be accepted on the basis of passing satisfactorily an E-RAU course equivalency examination.
 - (c) Grades are not transferable.
 - (d) Previous flight experience may be accepted in accordance with the E-RAU transfer policy on "Advanced Standing."
 - (e) Credit was earned at collegiate institutions which are accredited by the appropriate regional accrediting agency as certified by the current "Transfer Credit Practices of Selected Educational Institutions," published by the American Association of Collegiate Registrars and Admissions Officers.
 - (f) Acceptable transfer work will be indicated on the E-RAU transcript. If the work is not applicable to the student's degree program at Embry-Riddle, the work will be considered as electives in excess of minimal degree requirements. The level of credit (upper or lower division) is determined by the college or university initially granting the credit, regardless of the level of the E-RAU equivalent course.
2. All students will be required to take the examinations described under Basic Skills Requirement and will be subject to E-RAU regulations governing these tests (see page 24).
3. Students on probation at the last institution attended and students transferring from institutions not accredited by the appropriate regional accrediting agency will be placed on probation when enrolled. They *must* earn a grade point average of at least 2.0 the first trimester to continue in their E-RAU degree curriculum.
4. Embry-Riddle may require an evaluation examination for any course submitted for transfer credit if there is doubt concerning the equivalency of the transfer course with a similar course offered at Embry-Riddle.
5. The transfer student's records (transcripts, etc.) will be evaluated according to the rules, regulations and policies in the Catalog and the policy manual in effect at the time of his matriculation and registration on campus or at a Residence Center as a degree student. At that time, the student will be advised by the University Admissions Office of the status of his credit transfer, assuming his probationary period is satisfactorily passed.

ADVANCED STANDING

Examination scores, training in military service schools, and professional background experience may be submitted as a basis for admission to an advanced level. Credit may be awarded as follows:

- (1) The University offers advanced placement credit toward a college degree to those students who present College Entrance Examination Board (CEEB) Advanced Placement Test scores of 5, 4 or 3.
- (2) Embry-Riddle follows the standards recommended by the American Council on Education for awarding credit for College Level Examination Program (CLEP) and Defense Activity for Non-Traditional Educational Support (DANTES) examinations. The courses and hours of credit recognized by E-RAU for the general college level examinations by CLEP are as follows:

Communications	6 credit hours
Humanities	4 credit hours
Social Science	6 credit hours
Natural Science	6 credit hours
*Mathematics	3 credit hours

NOTE: According to the University policy, a minimum score of 50th percentile on the CLEP test credit for MA 111, MA 120 or MA 140 may be awarded.

*Not applicable to degree programs.

- (3) Credit for the CLEP subject examinations (except for the last 30 credits required for a baccalaureate, or last 12 credits required for an associate degree) will be accepted for equivalent E-RAU courses with the approval of the Dean of the College granting the degree. Scores on these tests must be submitted upon initial enrollment as a degree candidate to be officially evaluated for credit. International Campus students may apply CLEP credit after enrollment if they have the permission of their Center Director or Area Coordinator. Additional credit by examination may be awarded as indicated on page 22.
- (4) Training in military service schools will be considered for credit by each curriculum division, based on the recommendation of the American Council of Education.
- (5) Applicants with professional experience in areas related to the curriculum in which they request enrollment, may be allowed credit toward advanced standing. Training and experience which satisfy educational objectives of courses in the applicant's curriculum may be credited for advanced standing by the appropriate College.
- (6) Advanced standing may be granted for specific Aeronautical Science courses, on the basis of flight related experience and training acquired prior to enrollment at Embry-Riddle. The student must provide appropriate documentation to substantiate his background to the Dean, College of Aviation Technology, Daytona Beach Campus, or the Chairman, Aviation Technology Division, Prescott Campus, during his first trimester at Embry-Riddle. If the student has attended an FAA approved flight

school, a transcript of all flight training, signed by the school's chief instructor, should be provided. This transcript, along with personal flight logs, will be used for placement evaluation. The number of credits awarded for advanced standing will comply with the following University policy:

Credit granted on the basis of FAA certificates and licenses (other than maintenance technician), FAA written examinations, and Flight Division evaluations for advanced standing shall be one-half the amount of credit granted for those courses taken in residence. If the applicant has at least a Commercial Pilot Certificate and receives an E-RAU flight evaluation, full credit normally will be granted for those flight courses. Any credit differences between the amount awarded and the credit value assigned to the E-RAU courses are to be made up in science technology electives. The credit granted for FAA ratings earned through military training and for FAA ratings held by currently qualified airline pilots will be transferred as the equivalent of E-RAU resident courses.

Experience for which credit will be granted in accordance with the above procedures is as follows:

- (a) Satisfactory completion of an FAA approved Private Pilot Ground School or satisfactory completion of the Private Pilot (or higher) written examination and minimum of 40 hours of pilot experience: AS 100.
- (b) Satisfactory completion of an FAA approved Commercial Pilot Ground School or satisfactory completion of the FAA Commercial Pilot, or higher, written examination and a minimum of 190 hours of pilot experience: AS 100, AS 102, and AS 103. An individual who meets the aforementioned qualifications, but is rated Rotary Wing only will be allowed credit for AS 100, AS 102, and AS 201. If he has a Rotorcraft Helicopter Standard Instrument Rating, or has successfully completed the FAA instrument written examination, he may also be credited with AS 202.
- (c) Satisfactory completion of an FAA approved Instrument Ground School or satisfactory completion of the FAA Instrument Pilot written examination and a minimum of 200 hours of pilot experience: AS 100, AS 102, AS 103, AS 201 and AS 202.
- (d) Satisfactory completion of a U.S. military undergraduate pilot training program: AS 100, AS 102, AS 103, AS 201 and AS 202. Graduates of U.S. Air Force and U.S. Navy pilot training programs will also be granted credit for AS 309 and AS 307.
- (e) Satisfactory completion of the FAA Airline Transport Pilot written examination: AS 100, AS 102, AS 103, AS 201, AS 202 and AS 309.
- (f) Completion of an FAA Certificate for Helicopter Instructor: One (1) credit for FA 499, Special Topics in Flight.
- (7) Students holding FAA Airframe certification may petition for advanced standing in the E-RAU Maintenance Technology Certificate—Type 65 program and receive credit for AMT 200*, AMT 270 and AMT 370.

Students holding current FAA Powerplant certification may petition for advanced standing in the E-RAU Maintenance Technology Certificate—Type 65 program and receive credit for AMT 200*, AMT 280 and AMT 380.

Students who have 18 months on-the-job experience (after the completion of course work) in an aircraft maintenance AFSC/MOS/NEC or 30 months experience (after completion of course work) in an aircraft maintenance AFSC/MOS/NEC may receive credit for the following courses as appropriate:

AMT 355 Aircraft Maintenance Practicum (eight credit hours)

AMT 455 Advanced Aircraft Maintenance Practicum (eight credit hours). Individuals lacking on-the-job experience will fulfill the credit hours requirement with upper division electives selected from the AMT/CT/EL/FA/AS/MS academic disciplines.

*Duplicate credit for AMT 200 will not be awarded for holders of both an Airframe and Powerplant Certificate.

COURSE EQUIVALENCY EXAMINATION

A student who possesses qualifications not listed above and who considers that his background warrants consideration for advanced standing may submit appropriate evidence of his experience for evaluation, or the student may request that he be administered a course equivalency examination for specific courses. Flight experience will be evaluated in accordance with procedures outlined on the preceding page.

Applications to take course equivalency examinations are to be filed at the Campus Records Office. A fee of \$45 is charged for administering each written examination. The fee for a flight course equivalency examination depends upon aircraft utilization. An examination may be taken only once for each course.

Applications for advanced standing must be submitted prior to or during the first trimester at Embry-Riddle and must include adequate documentation, such as certification of professional level, evidence of completion of formal training programs and verification of work experience, where appropriate. International Campus students should submit this documentation with their applications for admission as degree seeking candidates.

Advanced standing and transfer credit, granted in accordance with these procedures, will be authenticated by the appropriate college and validated by the Campus Records Office for official records purpose. An evaluation form will be provided to the student.

NOTE: Although the student may receive credit for some AS courses, unless he is the holder of at least an FAA Commercial Pilot Certificate, he will be required to satisfactorily complete all flight proficiency, knowledge and examination requirements for FA 102, 103, 203, 204, and 305 at the Daytona Beach Campus or FA 102, 103, 203, 204, 311, and 313 at the Prescott Campus. The student with previous flight experience normally will complete portions of this requirement in minimum training time.

VETERANS

All E-RAU programs have been approved by the appropriate state approving agencies for enrollment of veterans eligible for U.S. Veterans' Administration benefits under the various Public Laws.

Veterans planning to further their education under veterans' benefits at Embry-Riddle should secure a Certificate of Eligibility from the nearest Veterans' Administration Office. Admission procedures for veterans are the same as those for other students. Upon enrollment at the University, veterans should process the Certificate of Eligibility through the University Veterans' Affairs Office.

- A. Degree students (regardless of college or program) at Daytona Beach or Prescott Campus: Students receiving VA educational benefits will lose educational benefits when repeating courses if the total number of new course registrations are less than 12 credit hours per full trimester (six credits per half trimester Summer term). Student benefits will be computed on the basis of the number of credits of new course registrations as determined by the VA regulations. Students should check with the campus Veterans' Affairs Office for more information.
- B. Students at International Campus locations should contact the appropriate E-RAU Director or Coordinator for information regarding VA benefits.
- C. All VA supported students, regardless of program, should read the following carefully:

In accordance with the requirements of VA Regulation 14253 (D), the following is incorporated in the school catalog for information. "Where unit courses do not receive credit or a grade, such as in the case of withdrawal, incomplete, pass/fail, etc., and such courses are not considered in determining satisfactory progress, the practice makes it possible for a veteran to make little or no progress toward his objective but continue to receive educational assistance. Whether or not the school considered such no grade/no credit results for purposes of its retention of the student, it must consider them for purposes of reporting unsatisfactory progress to the VA and its standards of progress for veterans must show that it does."

VA Regulation 14277 was revised to clarify that VA educational benefits are discontinued when the veteran or eligible person fails to maintain satisfactory progress, regardless of whether the school retains or will readmit him as a student. VA Regulation 14278 specifies that following such discontinuance, counseling is required by a VA counseling psychologist before further educational benefits may be authorized. This means that exception to the requirement of counseling may not be made on the basis that the school retains, readmits or would readmit the veteran or eligible person.

DEGREE COMPLETION PROGRAM/ ACTIVE DUTY MILITARY PERSONNEL

All branches of the Armed Services offer various "Bootstrap" and degree completion programs to qualified personnel. Embry-Riddle offers all possible assistance to the serious military applicant wishing to participate in one of these programs.

Upon application and receipt of all supporting documents, University personnel will evaluate previously completed college courses, military education and experience to determine advanced academic credit.

Each applicant receives a copy of the University evaluation form stating specifically the courses for which credit has been granted.

Applications should be submitted at least 90 days prior to the proposed enrollment date.

SAT/ACT

The American College Test (ACT) or the Scholastic Aptitude Test (SAT) is required for any student entering a degree program, either baccalaureate or associate.

Since these tests are given several times a year on a nationwide basis, the student **must** take the test before arriving on campus. The student should contact his high school guidance counselor or principal to determine the location of the nearest testing center. When a student registers for the test, the registration form should indicate in the proper space that a transcript of his scores will be sent to Embry-Riddle.

The SAT and ACT tests do not determine approval or disapproval for admission.

BASIC SKILLS REQUIREMENT

Embry-Riddle recognizes the importance of communications and related skills in all areas of aviation. A successful pilot, airport manager, aviation mechanic or other aviation professional must possess these skills in order to do his job effectively. Because of this, Embry-Riddle requires all of its graduates to demonstrate proficiency in the areas of expressive and receptive communications and quantitative skills. Proficiency may be demonstrated by passing the three basic skills courses required of all students or the bypass tests given to all incoming students.

The Receptive Communications Skills course (HU 115) is devoted to developing the reading and listening skills necessary for effective communications in all areas of aviation. The Expressive Communications Skills course (HU 105) trains students in writing and speech and relates these skills to aviation oriented problems. The Quantitative Skills course (MA 105) teaches students how to apply mathematical skills to a variety of aviation related problems.

Proof of proficiency in the above basic skills areas is required during the student's first trimester. All new students (including transfer students) either must register for the basic skills courses or successfully complete the bypass tests before they will be permitted to complete their registrations.

Students for whom English is a second language must demonstrate advanced English proficiency in two ways: 1) achieve a satisfactory score on the Michigan Test of English Language Proficiency (MTELP) and 2) deal successfully with the technical terminology and concepts of aviation English on an University-administered examination. Those students who do not demonstrate advanced English proficiency on the MTELP and technical English examination are required to take HU 104 Writing English as a Second Language, and HU 114, Reading English as a Second Language, in their first trimester. In addition, these students must carry at least two credit hours in basic academic areas such as mathematics or general aeronautics, depending on their chosen degree program.

International students who demonstrate satisfactory performance on the MTELP and technical English exams *must* follow the normal procedure for orientation, which includes taking the University's English and Math placement exams.

REGISTRATION FOR HANDICAPPED STUDENTS

Early registration for handicapped students may be arranged through the University Admissions Office. Eligibility to take advantage of this is contingent on proper forms being filed with this Office. Staff members will be present at early registration to assist students.

REGISTRATION FOR CONTINUED ENROLLMENT

After initial registration at the Daytona Beach or Prescott Campus, students must register for each subsequent trimester in which they plan to enroll. Tuition deposits, registration and payment of fees must be made in accordance with the instructions published by the University Admissions Office.

Penalties will be charged for late registration and late payment of fees. Late registration will be allowed during the first week of classes if unusual circumstances prohibited the student from registering during the scheduled period. (The late registration fee of \$50 applies in such cases.) Under no circumstances will registration be allowed after the first three days of classes.

For registration procedure information at International Campus locations, contact the appropriate Resident Center Director.

CONTINUOUS ENROLLMENT

Students failing to maintain continuous enrollment for any reason are required to reapply for admission. Students are considered continuing students, regardless of the number of hours for which they registered, unless they:

- (1) Enroll for 12 or more hours at another school
- (2) Leave the University for two consecutive years
- (3) Have been dismissed from the University.

Embry-Riddle Chapter III Aeronautical University

Guide to the Curriculum



GUIDE TO THE CURRICULUM

CAREER-ACADEMIC PROGRAM LOCATOR:

All degree programs at Embry-Riddle are designed to prepare the student for the aviation industry job market. Hence, the Career-Academic Program Locator, listed below, relates the student's desired career goal to the degree programs deemed most suitable for attainment of those goals.

Computer Careers in Aviation

Technical and supervisory positions within the aviation industry in research, development, test and evaluation; system design, computer programming; systems analysis; operations research; technical coordination and liaison; management information systems; microprocessor programming and interfacing; graphics development and implementation; computer operations and maintenance; systems and project management.

Academic Programs—Computers

- Aeronautical Studies Program
 - Computer Technology Area
- Aviation Computer Technology Program
 - Applied Mathematics Area
 - Applied Programming Area
 - Avionics Area
 - Engineering Science Area
 - Management Area
 - Microprocessor Applications Area

Engineering Careers in Aviation

Technical and supervisory positions within the aviation industry in research, development, test and evaluation; engineering design; stress analysis; engineering programming; production; quality control; field engineering; systems analysis and engineering; sales; project engineering; manufacturing; propulsion; missiles; space vehicles; technical illustration, writing and reporting; project management; inspection and safety; technical coordination and liaison; avionics and electronics; customer services; management information systems and computer technology.

Academic Programs—Engineering

- Aeronautical Engineering Program
- Aeronautical Studies Program
 - Aeronautical Engineering Area
- Aircraft Engineering Technology Program
- Aviation Computer Technology
 - Engineering Science Area

Flight Careers

Pilot positions for scheduled and supplemental airlines; corporations; charter and air taxi operators; air-freight companies; aerial photography and surveying; bush and agricultural flying; the military services; fixed base operations; flight schools; manufacturer's test pilot; search and rescue operation.

Academic Programs—Flight

- Aeronautical Science Program
- Aeronautical Studies Program
- Aviation Technology Program
- Professional Aeronautics Program

Maintenance Careers in Aviation

Technical and supervisory positions with the aviation industry in operation and maintenance management; technical writing; field service; commercial airline maintenance; general aviation maintenance; aircraft manufacturing; corporate fleet and fixed base maintenance; electronic and avionics manufacturing and repair; government flight activities; military rework facilities; customer services; safety inspectors and investigators; small shop supervision, management and operation.

Academic Programs—Maintenance

- Aeronautical Studies Program
 - Avionics Area
 - Maintenance Technology Area
- Aircraft Engineering Technology Program
- Aircraft Maintenance Program
- Aviation Maintenance Management Program
- Aviation Maintenance Technology Program
- Aviation Technology Program
- Avionics Maintenance Technology Program

Management Careers in Aviation

Positions with the aviation industry in marketing; public relations; operations, program planning and management; contracts management; project management; airlines and airport management; finance; manufacturing representation; purchasing; customer service; industrial relations and personnel management; maintenance management; operations management; flight crew training; fixed base operations; and aviation consulting.

Academic Programs—Management

- Aeronautical Studies Program
 - Airport Management Area
 - Air Transportation Management Area
 - Aviation Management Area
 - Computer Technology Area
- Aviation Administration Program
- Aviation Maintenance Management Program
- Aviation Management Program

DEGREE PROGRAMS

The University offers the following degree programs:

Bachelor of Science:

- Aeronautical Engineering
- Aircraft Engineering Technology
- Aeronautical Science
- Aeronautical Studies
- Aviation Administration
- Aviation Computer Technology
- Aviation Maintenance Management
- Aviation Management
- Aviation Technology

Bachelor:

- Professional Aeronautics

Associate in Science:

- Aeronautical Science
- Aeronautical Studies
- Aircraft Engineering Technology
- Aircraft Maintenance
- Aviation Maintenance Management
- Aviation Management
- Aviation Safety
- Avionics Maintenance Technology

Associate:

- Aviation Maintenance Technology
- General Aeronautics
- Professional Aeronautics

Master:

- Aeronautical Science
- Aviation Management
- Business Administration/Aviation

Areas of Concentration

Within certain degree programs, the student selects a particular Area of Concentration. An Area of Concentration consists of courses—supplemental to the core courses—which provide entry level career focus by imparting specialized knowledge and skills. Specific career options are determined in large part by the Area of Concentration selected by the student from those mentioned in the various degree programs.

The following are offered:

- Aeronautical Engineering
- Air Force Reserve Officer Training Program
- Air Transportation Management
- Airport Management
- Applied Mathematics
- Applied Programming
- Army Reserve Officers Training Program
- Aviation Management
- Aviation Safety
- Avionics
- Computer Technology
- Engineering Science

Flight Technology
Maintenance Technology
Microprocessor Applications
Radiotelephone Maintenance

Not all Areas of Concentration are available in all degree programs or at all University locations. The student should review the various options and select the program which best meets his career objectives.

GENERAL EDUCATION REQUIREMENTS

The University's baccalaureate programs are meant to achieve two goals: 1) provide students with a highly specialized aviation education supported by a broad, general education program, 2) develop students' understanding of themselves, their culture and background, thus enabling them to effectively deal with issues in a complex and changing world.

To provide the necessary skills and knowledge, the following general education requirements must be completed by all candidates for the bachelor's degree:

DISCIPLINE	CREDITS
Humanities/Social Sciences	15
Communicative Skills	6
Technical Report Writing	3
Other Humanities/Social Sciences	6
Mathematics/Physical Science	12
Mathematics	6
Physical Science	6
Economics	3
Computer Technology	3

FLIGHT PROGRAMS

All flight training which is encompassed in various degree programs at Embry-Riddle utilizes late-model, fully-equipped training aircraft. Aircraft type and flight configuration are optimized for the given training location and environment. At the Daytona Beach Campus, the Cessna 172 Skyhawk, Mooney M20C Ranger, and Cessna 310 are used, while at the Prescott campus, the Grumman Tiger Cat and Piper Seminole are used.

At the Daytona Beach Campus the Controlled Environment Training Complex, consisting of mockups, procedures trainers, part-task trainers, and simulators, provides the student with a safe, flexible and cost-effective training environment. As with aircraft types, the controlled environment training configuration is optimized to the location and training environment.

The E-RAU flight training program uses the "Gemini-Flight" concept whereby two students fly together on dual instructional flights. One student flies the aircraft, and the other student participates from the rear seat while the instructor conducts the lesson. The concept increases and reinforces the learning experience of both students at no additional expense to the student.

Flight training may be taken as an integral part of the Aeronautical Science degree program, as an area of concentration in other selected degree programs, or as elective credit in most degree programs. The student is cautioned to investigate the applicability of specific courses to specific degree programs prior to making the commitment and investment.

The flight training programs at the Daytona Beach and Prescott Campuses operate in different FAA General Aviation District Offices (GADO), and therefore may differ in specific rules, regulations and requirements. THE STUDENT WILL BE RESPONSIBLE FOR ADHERING TO ALL RULES, REGULATIONS AND PROCEDURES CONTAINED IN THE LOCAL CAMPUS BULLETIN AND FLIGHT OPERATIONS MANUAL. These University and FAA rules and regulations are incorporated herein by this reference.

AVIATION MAINTENANCE TECHNOLOGY PROGRAMS

Embry-Riddle has been training aviation maintenance technicians since 1926. The Aviation Maintenance Technology Department moved into the new Samuel Goldman Aviation Maintenance Technology (AMT) Center on the Daytona Beach Campus in 1977. Maintenance technology training may be taken as an integral part of the Associate in Aviation Maintenance Technology, Aircraft Maintenance, Avionics Maintenance Technology, Bachelor of Science in Aviation Technology, Aviation Maintenance Management, and Aircraft Engineering Technology programs. In addition, the AMT courses may be pursued as an Area of Concentration in other selected degree programs and/or selected courses may be used as elective credit in most E-RAU degree programs.

AIRFRAME AND POWERPLANT TECHNOLOGY

Embry-Riddle offers two distinct types of AMT degree programs for students who wish to prepare for the FAA Airframe and/or Powerplant (A&P) examinations and/or pursue degree programs which require that knowledge and skill.

Type 147: This degree type, offered at the Daytona Beach Campus, presents a carefully selected blend of theory and practical applications, which prepares the student and establishes his eligibility to take his FAA Airframe and/or Powerplant examinations. Students perform actual repairs and overhaul of engines and accessories, including those used in Embry-Riddle's fleet of aircraft. Other academic courses may be taken concurrently (including Avionics Technology) to minimize the time and money necessary to meet degree requirements. The Samuel Goldman AMT Center at the Daytona Beach Campus is fully approved under part 147 of the Federal Aviation Regulations and holds Air Agency Certificate No. 277 and FAA Repair Station Certificate No. 708-55. Type 147 is available only on the Daytona Beach Campus.

Type 65: In keeping with the FAA's recognition of on-the-job experience as an eligibility requirement for taking its A&P examinations, Embry-Riddle offers special AMT courses to students with such work experience. These courses deal largely with theory and concepts and are designed to augment the student's practical experience. Successful completion of

the courses, together with the on-the-job experience, and/or successful completion of the A&P examinations, may be applied toward meeting the requirements of various E-RAU degree programs. Type 65 courses are offered at various centers of the International Campus.

AVIONICS TECHNOLOGY

The Avionics Technology studies prepare students to become avionics (aviation electronics) technicians with specific understanding of circuit theory, troubleshooting and repair of avionics systems, such as Very High Frequency Communications (VHF COMM), VHF Omnidirectional Range (VOR), Instrument Landing System (ILS), Automatic Direction Finder (ADF), transponder, Distance Measuring Equipment (DME), Area Navigation (RNAV), Weather Radar and Flight Control Systems. The University offers programs in Electronics/Avionics which (1) lead to an Associate in Science Degree in Avionics Maintenance Technology, (2) augment the student's A&P program, (3) prepare the student for FCC license examinations, and (4) apply toward various University degree programs. These programs are available on the Daytona Beach Campus and at selected locations of the International Campus.

HELICOPTER MAINTENANCE TECHNOLOGY

The Helicopter Maintenance Technology Course gives students technician's training in the mechanics and aerodynamics of rotary wing aircraft. This special course is designed to augment the A&P program. Highly recommended for those planning to join the helicopter industry, this course is offered only on the Daytona Beach Campus.

COMPUTER TECHNOLOGY PROGRAM

Computer technology has become a prerequisite for entering certain fields within today's aviation industry. The Bachelor of Science in Aviation Computer Technology provides Areas of Concentration in Applied Mathematics, Application Programming, Management, Avionics, Engineering Science and Microprocessor Applications. In addition, an Area of Concentration in Computer Technology is available in several degree programs. Computer Technology courses are available (and sometimes required) in all degree programs.

ENGINEERING PROGRAMS

Embry-Riddle offers the Bachelor of Science degree in Aeronautical Engineering and both the Bachelor of Science and the Associate in Science in Aircraft Engineering Technology at the Daytona Beach Campus. Baccalaureate programs at this campus are accredited by the Accreditation Board for Engineering Technology (ABET) (formerly, the Engineers' Council for Professional Development). The Bachelor of Science degree in the Aeronautical Engineering Program is being introduced at the Pres-

cott Campus in Fall 1980. Enrollment for Fall 1980 term at Prescott is limited to entering freshmen only. For information regarding accreditation, see p. 7 of this catalog.

The Aeronautical Engineering program provides the student with specific aircraft design skills, as well as a broad exposure to theory and modern analysis, measurement, communications and computational techniques essential for a wide range of entry level engineering positions in the aerospace industry. Students who enroll in the Aircraft Engineering Technology programs must obtain FAA certification as Airframe and Powerplant Technicians or successfully complete the requirement for the E-RAU Maintenance Technology Certificate Type 147 as well as take a rigorous course of instruction in engineering fundamentals. These practically-oriented technology graduates are qualified to serve in a variety of aeronautical engineering support and liaison roles.

MANAGEMENT PROGRAMS

Embry-Riddle offers management related degrees in Aviation Administration, Maintenance Management and Aviation Management. The programs are designed to provide the student with basic entry-level management skills and perspective, as well as the opportunity to focus his career potential in various Areas of Concentration such as airport management, transportation management, flight technology, computer technology, and applied mathematics. Programs are relatively flexible, allowing the student to tailor his program to his specific career objectives. The programs also permit transfer students to utilize optimally their background and previous academic achievements.

RESERVE OFFICER TRAINING PROGRAMS

Not all of the Reserve Officer Training Programs described below are available at all University campuses or locations. The student should contact the University Admissions Office to determine program availability.

AIR FORCE RESERVE OFFICER TRAINING CORPS

Embry-Riddle students may enroll in the Air Force Reserve Officer Training Corps (AFROTC) program and receive academic credit in an Area of Concentration in the Aeronautical Studies program or elective course credit in other E-RAU programs. The AFROTC curriculum is designed to prepare college students for initial active duty assignments as Air Force commissioned officers.

Any qualified student may pursue the AFROTC program. Two and four year programs are available to male and female students. AFROTC courses can be individually tailored to accommodate the student, provided at least four trimesters remain prior to graduation. AFROTC courses are not offered at Embry-Riddle during the summer terms.

Enrollment procedures for the first two years of the four year program, known as the General Military Course (GMC), are the same as for any other course. One simply selects an AFROTC class card during registration. To enter the last two years of the four year program—the Professional Officers Course (POC)—the student must have taken the Air Force Officer Qualifying Test (AFOQT), an Air Force Medical Examination, and completed a four-week summer field training session at an Air Force base. These actions will be accomplished during the first two years as a GMC cadet.

The two year program is basically the same as the last two years of the four-year program but is preceded by a six-week summer field training session. The two-year program student must also take the AFOQT and Air Force Medical Examination prior to summer field training. Students interested in the two-year program should contact the nearest AFROTC detachment for AFOQT, medical examination, initial interview and summer field training scheduling. This information then should be forwarded to AFROTC Detachment 157 at Embury-Riddle.

Textbooks for all AFROTC courses are free. Students enrolled in the POC receive a \$100 per month tax-free subsistence allowance, up to \$2,000. In addition, students attending summer field training receive travel pay to and from the designated Air Force base as well as pay for attending the field training session.

NOTE: Additional information concerning Reserve Officer Training Programs is contained under the Financial Assistance Chapter of this Catalog.

ARMY RESERVE OFFICER TRAINING CORPS

The Army Reserve Officer Training Corps (ROTC) program provides an opportunity to acquire the skills and knowledge necessary for commissioning as a lieutenant in the US Army, US Army Reserve or National Guard. The program offers both a four-year and two-year option. The two-year option allows students with at least two academic years remaining in either undergraduate or graduate studies to meet all requirements for commissioning.

The Military Science curriculum is divided into three phases:

1. Basic Military Science

The Basic Military Science courses are designed for four-year participants and are normally offered during the freshman and sophomore years. These courses address military organization, equipment, weapons, map readings, land navigation, use of a compass, grade structure, the Threat, communications and leadership.

2. Advanced Military Science

The Advanced Military Science courses are normally taken during the junior and senior years. These courses specialize in small unit tactics, how to prepare and conduct military training, military justice system, staff procedures, decision making and leadership.

3. Summer Camp

Prior to commissioning, each cadet must successfully complete an evaluation of the skills learned. This evaluation is conducted at Ft. Bragg, N.C., during June and July. Summer camp requirements apply only to Advanced Military Science students.

A summer training program is offered for students who are academic juniors without previous ROTC or military training. Two options are available for summer training:

1. A five-week course on campus
2. A six-week course at Ft. Knox, KY.

Either summer option will qualify a student for entry into the Advanced Course, thus allowing completion of all requirements for commissioning within two years. Students attending the summer course at Ft. Knox receive approximately \$500 pay.

All students in the Advanced Military Science Course receive a tax-free monetary allowance of \$100 per month.

Scholarships are available to qualified ROTC students. These scholarships provide full tuition, fees and required textbooks. Additionally, scholarship recipients receive \$100 tax-free per month.

Requisites for admission to the Basic Course are the following:

1. Be enrolled in a Baccalaureate or Master's program
2. Be at least 18 years of age at time of entry but not more than 28 years at time of graduation
3. Be a U.S. citizen.

Requisites for admission to the Advanced Course are the following:

1. Successful completion of Basic Course or equivalent
2. Successful completion of an Army officer qualifying test
3. Successful completion of an Army physical examination
4. Selection by the Professor of Military Science
5. Agreement to complete the Advanced Course requirements and serve on active, reserve, or national guard duty as a commissioned officer.

NAVY AVIATION RESERVE CANDIDATE PROGRAM

Students are eligible for the U.S. Navy AVROC program upon completion of their freshman year. Once selected, the student is enlisted in the Naval Reserve. Between the junior and senior years, the student attends an eight-week initial training period at Pensacola, FL, followed by another eight weeks of Aviation Officer Candidate School after graduation. The student is commissioned as an ensign in the Naval Reserve when he has received a baccalaureate and has completed the two summer training periods. The student then continues into Navy Pilot or Navy Flight Officer training at Pensacola.

The AVROC program is active on campus through the AVROC Club, a University chartered organization for students having a common interest in the AVROC program. Membership in the student organization is not a requirement for the Navy's AVROC program. The Navy arranges field trips, distributes information to the students, and interviews applicants for the AVROC program on campus.

MARINE CORPS COMMISSIONING

For freshmen, sophomores and juniors, the Marine Corps has the Platoon Leaders Class Program (PLCP). Freshmen and sophomores attend two six-week training sessions, and juniors attend one 10-week session at Quantico, VA.

There is no requirement to take military science courses or wear a uniform on campus while in college. Time spent in the PLC program counts for pay purposes while on active duty. There is no obligation to the program; candidates have until the end of their senior year to decide on their commission. A guaranteed pilot and flight officer program is available to qualified personnel.

For seniors, there is the Aviation Officer Candidate Program (AOC) and the Unrestricted Officer Candidate Program (OC). Guaranteed pilot and flight officer programs are also available. Application is made during the senior year and precommissioning training (10 weeks) occurs after graduation.

Applicants for either the PLC, AOC or OC Program are paid during the training.

NOTE: Additional information concerning financial assistance can be found in the Financial Assistance Chapter of this catalog.

COOPERATIVE EDUCATION PROGRAM

The Cooperative Education (Co-op) concept is based on the theory that not all learning takes place in the classroom but is dependent upon and reinforced by practical work experience. Open to full-time undergraduate students enrolled in a degree program, the Co-op program is optional.

Through Co-op, students bridge the gap between the classroom and working world, earn up to six credit hours per Co-op assignment of up to 16 weeks, plus other significant benefits related to the selected career field and relevant to their chosen academic programs. Co-op also provides an opportunity to assess career goals and academic programs while earning wages commensurate with the work assignments.

A research study conducted by the National Commission on Cooperative Education concluded that Co-op students received these additional benefits: (1) 13 to 1 advantage in being hired over other recent college graduates, (2) a starting salary averaging 9 percent higher, (3) an average of one promotion every two years versus one every three years for non Co-op students and (4) sooner promotion to a managerial position.

To apply for the program, a student must have a GPA of 2.25 or better, have completed his freshmen academics (first two trimesters), or, if a transfer student, have completed one trimester at Embry-Riddle. Participation in the program requires the approval of the Co-op faculty advisor and the Co-op Education Division Chairman, attendance at a Co-op seminar, and the student's success in securing a position. Citizenship requirements are specified by the employer. Final selection for a Co-op job is the responsibility of the employer.

Veterans should contact the Veteran's Affairs Coordinator to determine VA benefit options related to the Co-op program. Foreign students should contact the International Student Advisor regarding visa requirements for working in the United States.

Students interested in the program should contact the Industry Liaison Office, located in the University Center at the Daytona Beach Campus. The University's commitment to close cooperation with the aviation community is implemented through the Office of Industry Liaison.

The Career Center is located within the Office of Industry Liaison and includes the placement office and the Cooperative Education program. Faculty members actively participate as Cooperative Education advisors.

AVIATION SEMINARS/WORKSHOPS/ SHORT COURSES

To maintain a close working relationship with government agencies, the airlines, aircraft manufacturers and general aviation, Embry-Riddle actively pursues a continuous program of aviation seminars. The product of this program is the exchange of ideas on current philosophies, trends and techniques in the field of aviation which contribute to the growth and practicability of the curricula. Aviation seminars also provide an opportunity for visiting aviation associations to become familiar with the University and its contribution to the aviation community.

Groups invited to participate in E-RAU seminars include corporate aviation managers, air safety organizations, airline management, aviation law/insurance professionals, aviation publishers and writers, aviation arbitrators, government aviation agencies and professional flying associations. Occasionally, upper division students are selected to participate in these programs in order to develop an understanding of, and rapport with, the professional aviation community.

GRADUATE PROGRAMS

Embry-Riddle offers the Master of Business Administration in Aviation, the Master of Aviation Management and the Master of Aeronautical Science degrees. Courses required for these degree programs are offered at several of the University's Resident Centers throughout the world as well as the Daytona Beach Campus.

Applicants for the Master of Business Administration in Aviation, or Master of Aviation Management degree who possess a baccalaureate from an accredited college or university may be admitted with full graduate standing, providing their background reflects an understanding of the concepts of economics (macro and micro), accounting, statistics and management.

Applicants for the Master of Aeronautical Science degree may be

admitted with full graduate standing, provided they possess the background indicated for the Master of Business Administration in Aviation degree and the academic training associated with a Commercial Pilot Certificate with Instrument Rating which meets E-RAU standards of quality and content.

Applications will also be accepted from graduates of accredited colleges and universities who do not possess all necessary undergraduate prerequisites at the time of application. These students will be admitted to graduate study in a provisional status. Undergraduate students at accredited colleges and universities who are within 30 credit hours of graduation and have a cumulative GPA of 3.0 or better may enroll as Special Students with the approval of the Associate Dean of Graduate Studies.

For additional information, contact the University's Admissions Office for the Graduate Catalog. Students located at E-RAU Resident Centers should contact the Resident Center Director. Students located in the Miami, Florida area should contact the E-RAU Graduate Program Director, Embry-Riddle Aeronautical University, 11300 N.E. Second Avenue, Miami, Florida 33161 (the Center is located on the Barry College campus). Students at the Daytona Beach Campus should contact the Associate Dean of Graduate Studies.

SERVICEMEN'S OPPORTUNITY COLLEGES

Embry-Riddle is a member institution of the four-year Servicemen's Opportunity Colleges (soc). As a member, Embry-Riddle recognizes the unique problems confronting active duty service personnel in achieving their educational goals and thus, offers a Contract for Degree arrangement. This arrangement enables students enrolled in E-RAU courses and programs at the International Campus locations, who are subsequently reassigned on military orders to installations not served by the University, to complete their degree programs.

Students interested in applying for a Contract for Degree may obtain additional information and application forms from E-RAU Directors or Coordinators at the Resident Centers, or write the Dean of the College of Continuing Education, Embry-Riddle Aeronautical University, Star Route, Box #540, Bunnell FL 32010.

SPECIAL CONTRACT PROGRAMS

Embry-Riddle offers on a contract basis its resources (faculty, aircraft, simulators, maintenance and test equipment, curricula, and facilities) to government agencies (foreign and domestic), industry, and associations. The University works with the potential clients in reviewing their requirements and establishing special programs to meet their needs. The University acts as "total program manager" in providing complete education/training services to include English as a second language, aviation language, "cultural counseling" and special in-service training as well as maintenance, flight, and engineering programs specifically developed to meet the needs of a particular group of students.

Embry-Riddle Chapter IV

Aeronautical University

Degree Programs



DEGREE PROGRAMS

This chapter contains vertical listings of courses, both required and elective, which must be taken to attain a degree. The courses are grouped by trimester. However, vertical listings are merely guides for optimum sequencing of courses with prerequisites. In most cases, it is not mandatory that courses be taken in this order.

Aeronautical Engineering Programs

INTRODUCTION

The Bachelor of Science degree program in Aeronautical Engineering prepares the student for a career in aeronautical engineering and for graduate studies in this field. Career areas include aerospace vehicle and propulsion system research, design and development, ground and flight testing, production, field and liaison engineering. Career preparation begins with courses in chemistry, physics, and mathematics. These are followed by studies of engineering mechanics, computer programming, aerodynamics, aircraft structures, thermodynamics, propulsion, basic electrical engineering, and materials science. Finally, a sequence of laboratory and design courses demonstrate, through practical experiences using aeronautical industry-oriented methods, how the theoretical coursework is applied to actual engineering problems. The technical coursework is complemented by studies in communications, humanities and the social sciences.

ADMISSION REQUIREMENTS

To enter this program, students should have demonstrated a competence in mechanical drawing, mathematics, physics and chemistry in high school. They should be prepared to enter Calculus I, having demonstrated proficiency in algebra and trigonometry. Students can prepare themselves for this degree, if required, by taking MA 140 College Algebra, MA 141 Trigonometry, and ET 101 Engineering Graphics at Embry-Riddle prior to taking MA 241 Calculus and Analytic Geometry I and ET 110 Drafting and Descriptive Geometry.

Students must also demonstrate proficiency in reading and English usage at the freshman level. Developmental courses are required for students demonstrating basic communication skill needs. (See pages 24, 25).

DEGREE REQUIREMENTS

The Bachelor of Science in Aeronautical Engineering degree program requires 138 credit hours, of which 40 credit hours must be upper level (300-400 number) courses. The program can be completed in nine trimesters. The courses necessary to earn this degree are listed below.



BACHELOR OF SCIENCE DEGREE AERONAUTICAL ENGINEERING

TRIMESTER	COURSE NUMBER/TITLE		CREDITS
FIRST	AE 101	Intro. to Aeronautical Engineering	2
	ET 110	Drafting and Descriptive Geometry	2
	MA 241	Calculus I	4
	PS 105	Chemistry I	4
	HU 120	Communications I	3
			<hr/> 15
SECOND	MA 242	Calculus II	4
	PS 106	Chemistry II	4
	PS 201	Engineering Physics I	5
	HU 121	Communications II	3
			<hr/> 16
THIRD	ES 201	Statics	3
	MA 243	Calculus III	4
	PS 202	Engineering Physics II	5
	HU 220	Communications III	3
			<hr/> 15
FOURTH	ES 302	Solid Mechanics	3
	ES 303	Dynamics	3
	ES 304	Fluid Mechanics	3
	HU 221	Technical Report Writing	3
	MA 340	Differential Equations	3
			<hr/> 15
FIFTH	AE 301	Aerodynamics I	3
	AE 304	Aircraft Structures I	3
	CT 210	Computer Programming for Engineers	3
	MA 441	Advanced Engineering Mathematics I	3
	PS 303	Modern Physics	3
			<hr/> 15
SIXTH	AE 302	Aerodynamics II	3
	AE 310	Wind Tunnel Lab I	2
	AE 404	Aircraft Structures II	3
	ES 305	Thermodynamics	3
	EC 210	Microeconomics	3
	SS 110	World History OR	3
	SS 120	American History	3
			<hr/> 17

SEVENTH	AE 405	Aircraft Structures III	3
	AE 406	Jet and Rocket Propulsion	3
	AE 413	Airplane Stability and Control	3
	ES 307	Engineering Materials Science with Lab.	3
	ES 404	Electrical Engineering I with Lab	4
			<hr/>
			16
EIGHTH	AE 401	Advanced Aerodynamics I	3
	AE 420	Aircraft Preliminary Design	3
	ES 405	Electrical Engineering II	3
	ES 410	Structures and Instrumentation Lab	2
	SS 210	Introduction to Sociology OR	
	SS 220	Introduction to Psychology	3
		Mathematics Elective	3
			<hr/>
			17
NINTH	AE 421	Aircraft Detail Design	3
	HU/SS	Elective (300-400 level)	3
		Technical Electives (300-400 level)	6
			<hr/>
			12
TOTAL CREDITS			138

TECHNICAL ELECTIVES:

AE 399, 402, 410, 433, 499
 ES 399, 401, 403, 407, 408, 409, 499
 ET 401
 CT 309, 312, 316, 318, 340, 350, 360,
 399, 410, 430, 435, 472, 499
 CE(AE): By Special Arrangement

MATHEMATICS ELECTIVES:

MA 300, 399, 412, 430, 442, 443, 499

Aircraft Engineering Technology Programs

INTRODUCTION

The Bachelor of Science degree program in Aircraft Engineering Technology (AET) is designed to prepare students for careers in such areas as aerospace vehicle and propulsion overhaul, modification, repair, fabrication, production, field and depot service, testing, and maintenance, either in the aircraft or engine industry or with operating airlines. Graduates will be qualified to perform or supervise work on airframes and powerplants and to support engineering functions in the development of new aircraft and operations.

An Associate Degree program is also available. The Associate of Science in AET represents the first four trimesters of the B.S. AET degree program and is designed to give students the fundamentals of the humanities, social sciences and basic mathematical sciences to accompany their FAA Maintenance Technician Certificates. Graduates of the Associate program will be qualified to work on airframes and powerplants and to support engineering functions.

ADMISSION REQUIREMENTS

Students planning to enter the AET program should be interested in practical mechanics, engines, working with their hands, building models, and should want to enter a field where they will work with aeronautical hardware.

DEGREE REQUIREMENTS

All candidates for the Bachelor of Science in AET degree must possess FAA Airframe and Powerplant Certificates or fulfill the requirements of the E-RAU Type 147 program. The AET degree requires the courses listed below.

BACHELOR OF SCIENCE DEGREE AIRCRAFT ENGINEERING TECHNOLOGY

TRIMESTER	COURSE NUMBER/TITLE		CREDITS
FIRST	*PS 105	Chemistry I	4
	*HU 120	Communications I	3
	*ET 101	Engineering Graphics	2
	*MA 140	College Algebra	3
	*MA 141	Trigonometry	2
	*SS 110	World History OR	
	SS 120	American History	3
			<hr/> 17
SECOND	*HU 121	Communications II	3
	*PS 106	Chemistry II	4
	*MA 241	Calculus I	4
	*ET 110	Drafting and Descriptive Geometry	2
	*EC 210	Microeconomics	3
			<hr/> 16
THIRD	*HU 220	Communications III	3
	*PS 201	Engineering Physics I	5
	*MA 242	Calculus II	4
	CT 210	Computer Programming for Engineers	3
			<hr/> 15
FOURTH	*PS 202	Engineering Physics II	5
	*MA 243	Calculus III	4
	*SS 210	Sociology OR	
	SS 220	Psychology	3
	*ES 201	Statics	3
	*HU 221	Technical Report Writing	3
			<hr/> 18
FIFTH	*HU 250	Introduction to Logic	3
	ES 302	Solid Mechanics	3
	ET 306	Applied Electrical Science with Laboratory	3
	ES 303	Dynamics	3
	HU SS	Elective	3
			<hr/> 15
SIXTH	ET 301	Applied Aerodynamics with Laboratory	3
	AE 304	Aircraft Structures I	3
	ES 307	Engineering Materials Science with Lab	3
	ES 305	Thermodynamics	3
	ET 303	Aircraft Drafting	3
			<hr/> 15

SEVENTH	AE 404	Aircraft Structures II	3
	ET 403	Aircraft Detail Design	3
	HU SS	Elective (300/400)	3
		Technical electives	6

+ AMT/FAA	License Requirements	15
		21

TOTAL CREDITS 132

TECHNICAL ELECTIVES:

AE 405	
ET 307, 399, 401, 499	
CT 309, 312, 316, 318, 340, 350,	
360, 399, 410, 435, 472, 499	
PS 303	
CEAE: By Special Arrangement	

†The purpose of this degree makes it highly desirable that the student possess a valid FAA Airframe and Powerplant Mechanic's License in order to work on aircraft. Accordingly, students who possess both Airframe and Powerplant Certificates will receive advanced standing for these 21 hours; students taking the E-RAU Type 147 program may apply the following courses to meet this 21 hour requirement.

AMT 252	Engine Installation and Operations	2
AMT 255	Turbine Engine Theory, Design and Maintenance	2
AMT 321	Aircraft Electrical Systems and Lab	
AMT 322	Hydraulic and Pneumatic Systems	4
AMT 323	Aircraft Environmental and Fuel Systems	2
AMT 351	Reciprocating Engine Overhaul	3
AMT 353	Turbine Engine Systems, Engine Overhaul and Operations	4
		4

It may be necessary for students to fulfill prerequisites for these courses. Credit received for prerequisite courses will be considered as credit in excess of degree requirements.

ASSOCIATE IN SCIENCE DEGREE AIRCRAFT ENGINEERING TECHNOLOGY

Those courses required for the Associate in Science in Aircraft Engineering Technology are indicated above with an asterisk (*). In addition, the student must fulfill the requirements of the Certificate of Completion Type 147 or possess FAA Maintenance Technology Certification.

Aeronautical Science Programs

INTRODUCTION

The Aeronautical Science program coordinates academic courses with flight training to prepare the student for a career in aviation or to continue at the graduate level. In addition to the academic degree, upon graduation the student is qualified to be examined for the FAA Commercial Pilot Certificate with Instrument and Multi-Engine ratings and Flight Instructor Certificate-Airplane. The operational/management aspect of the aviation industry is emphasized. The program provides a background for progression into management positions.

ADMISSION REQUIREMENTS

To be admitted, students must meet the general University requirements for admission and the age and physical qualifications for a flight training program. These requirements are outlined in the Admission to the University Chapter of this Catalog.

REQUIRED FLIGHT COURSES

Once a student enrolls at Embry-Riddle, all subsequent flight courses must be completed in residence at the University. Flight time or flight courses completed elsewhere during enrollment at E-RAU will not be credited toward completion of degree requirements. Students who attend other schools without proper approval are subject to dismissal.

At least one flight course must be completed in residence at Embry-Riddle, regardless of any advanced standing or transfer credits which may be granted. Exceptions may be made for qualified fixed-wing military trained pilots who are on active duty or have been released from flight duties within the preceding 12 months, or for currently qualified fixed-wing airline pilots. Students may be required to attend one full summer of flight courses. For further information, see the Academic Rules and Regulations Chapter of this Catalog.

DEGREE REQUIREMENTS

The Bachelor of Science degree in Aeronautical Science may be attained in eight trimesters. To earn the degree a minimum of 132 credit hours is required. These credits consist primarily of flight courses and their corequisites, mathematics, science, basic management, humanities and social studies. General education and aviation related subjects are combined with flight training to produce a pilot with a high level of competence.

An Associate in Science degree in Aeronautical Science is granted upon completion of 79 credit hours and may be obtained in five trimesters. The program consists of flight courses and their prerequisites, mathematics, science, management, humanities and social studies. Upon completion of the curriculum, the student is qualified to be examined for the FAA Commercial Pilot Certificate with Instrument rating. For information on the Master's of Aeronautical Science Degree program, see page 103 of this Catalog.



BACHELOR OF SCIENCE DEGREE AERONAUTICAL SCIENCE

TRIMESTER	COURSE NUMBER/TITLE		CREDITS
FIRST	*FA 102	**Primary Flight	2
	*AS 100	Foundations of Aeronautics	4
	*AS 101	History of Aviation	3
	*HU 120	Communications I	3
	*MA 111	College Math for Aviation I	3
			<hr/> 15
SECOND	*FA 103	Basic Flight	2
	*AS 102	Navigation I	3
	*AS 103	Flight Rules and Regulations	3
	*HU 121	Communication II	3
	*MA 112	College Math for Aviation II	3
	*PS 103	Technical Physics I	3
			<hr/> 17
THIRD	*FA 203	Intermediate Flight	2
	*AS 201	Meteorology	3
	*AS 202	Navigation II	3
	*HU 220	Communications III	3
	*PS 104	Technical Physics II	3
	*AS 203	A/C Engines-Reciprocating	3
			<hr/> 17
FOURTH	*FA 204	Advanced Flight I	2
	*AS 210	A/C Systems and Components	3
	*PS 101	Basic Chemistry	3
	*EC 110	Macroeconomics	3
	*MS 205	American Business Enterprise	3
	*SS 220	Introduction to Psychology	3
			<hr/> 17

FIFTH	*FA 305	Advanced Flight II OR	
	FA 311	Advanced Flight II	2
	*AS 309	Basic Aerodynamics	3
	+ AS 404	Principles of Instruction I	3
	MS 110	Accounting I	3
	EC 210	Microeconomics	3
	CT 209	Introduction to Computers	3
			17
SIXTH	FA 313	Advanced Flight III OR	
	FA 340	Multi-Engine Flight	1
	+ *AS 303	Government and Aviation	3
	AS 310	Aircraft Performance	3
	MS 305	Management Analysis and Concepts	3
	*AS 307	Flight Physiology	2
	MS/EC	Upper Level Elective	3
		Elective (Open)	3
			18
SEVENTH	FA 415	Certified Flight Instructor—ASMEI OR	
		Approved Flight Elective	1
	AS 311	Aircraft Engines Turbine	3
	AV 301	Avionics for Aviators	3
	*HU 221	Technical Report Writing	3
	HU 250	Introduction to Logic	3
	AS	*AS Elective	3
			16
EIGHTH	AS 408	Flight Safety	
	AS	*AS Elective	3
	MS/EC	Upper Level Elective	6
		Elective (Open)	3
			3
			15
TOTAL CREDITS			132

Students enrolled in the Army or Air Force ROTC program may substitute MY or AF courses for the stated elective courses (AS, MS, and open).

*Those courses required for the Associate in Aeronautical Science.

**Not always taken in the first trimester.

***To be selected from the following Aeronautical Science courses: AS 401, AS 405, AS 406, AS 410, AS 412.

+ At the Prescott Campus, AS303 should be taken in the fifth trimester and AS 404 should be taken in the sixth trimester in order to maintain optimum sequence of courses.

ASSOCIATE IN SCIENCE DEGREE AERONAUTICAL SCIENCE

Those courses required for the Associate in Science in Aeronautical Science are indicated above with an asterisk(*). This curriculum requires 79 credit hours.

Aeronautical Studies Program

INTRODUCTION

The Aeronautical Studies Program is a broad course of study providing a liberal arts education while exposing the student to different facets of aviation. The student gains an entry level career focus into one of several specialized vocational areas in either the private or government sectors of the aviation industry. Specific career options are determined in large part by the Area of Concentration selected by the student from those described on the following pages.

ADMISSION REQUIREMENTS

Admission requirements are the same as those outlined in the Admission to the University Chapter of this Catalog, except in the case of the student selecting flight technology as an Area of Concentration. In this instance, the admission requirements are the same as for the Aeronautical Science Degree program.

DEGREE REQUIREMENTS

The Bachelor of Science Degree in Aeronautical Studies may be earned in eight trimesters. A minimum of 132 trimester credit hours is required. A minimum cumulative grade point average of 2.0 on a 4.0 point scale is also required and includes all courses taken at the University.

The core program consists of 87 credit hours in the following disciplines:

- Aeronautical Science
- Computer Technology
- Humanities
- Mathematics
- Management/Economics
- Physical Science
- Social Science

In addition to the core courses, an Area of Concentration is required. This provides the student with sufficient skills and knowledge in a chosen discipline preparatory for entry into a specific career field in aviation.

AREAS OF CONCENTRATION:

- Aeronautical Engineering
- Air Force Aerospace Studies (AFROTC)
- Air Transportation Management

Airport Management
 Applied Mathematics
 Management
 Avionics
 Computer Technology
 Flight Technology
 Maintenance Technology
 Military Science (Army ROTC)
 Radiotelephone Maintenance Technology

A general description of each Area of Concentration and the courses required are listed on pages 53-61. Elective courses may be chosen in each Area of Concentration, but the number of electives varies among the areas.

Forty credit hours must be taken on the junior and senior levels (300 or 400 designated courses). In some cases all of the open electives must be upper level courses in order to meet this requirement.

BACHELOR OF SCIENCE DEGREE AERONAUTICAL STUDIES

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	* AS 100 Foundations of Aeronautics	4
	* AS 101 History of Aviation	3
	* HU 120 Communications I	3
	*† MA 111 College Math for Aviation I	3
	* SS 110 World History, OR	
	SS 120 American History	3
		<hr/> 16
SECOND	* AS 102 Navigation I	3
	* AS 103 Flight Rules and Regulations	3
	* HU 121 Communications II	3
	*† MA 112 College Math for Aviation II	3
	* MS 205 American Business Enterprise	3
		<hr/> 15
THIRD	* AS 201 Meteorology	3
	* HU 220 Communications III	3
	*† PS 102 Explorations in Physics	3
	* EC 110 Macroeconomics	3
	* CT 209 Introduction to Computers	3
	* MS 110 Accounting I	3
		<hr/> 18
FOURTH	* PS 101 Basic Chemistry	3
	*† AS 211 A/C Engines and Systems	3
	* EC 210 Microeconomics	3
	* SS 220 Introduction to Psychology	3
		3
		<hr/> 15

FIFTH	* HU 250	Logic OR	
	* HU 340	Philosophy	3
	* HU 221	Technical Report Writing	3
	MS 305	Management Analysis and Concepts	3
		Area of Concentration	9
			<hr/>
			18
SIXTH	HU/SS	Elective (300-400 level)	3
	* AS 307	Flight Physiology	2
		Area of Concentration	12
			<hr/>
			17
SEVENTH	* AS 303	Government and Aviation	3
	HU/SS	Elective (300-400 level)	3
		Area of Concentration	12
			<hr/>
			18
EIGHTH	AS 405	Aviation Law	3
	AS 409	Aviation Safety	3
		Area of Concentration	9
			<hr/>
			15
			<hr/>
TOTAL			132

* Courses required for the Associate in Science in Aeronautical Studies Degree.

† See "special requirements" under Area of Concentration.

ASSOCIATE IN SCIENCE DEGREE AERONAUTICAL STUDIES

Those courses required for the Associate in Science in Aeronautical Studies are indicated above with an asterisk(*). This curriculum requires 75 credit hours.

AREAS OF CONCENTRATION

Aeronautical Engineering

This area gives the individual a base in science and technology for entering many areas of the aviation industry. NOTE: The student must begin work in this area in the first trimester and must have the necessary prerequisites for the designated required courses.

Required Courses:

Number	Subject	Credits
CT 309	FORTTRAN Programming	3
CT 360	Advanced FORTTRAN Applications	3
MA 241	Calculus I	4
MA 242	Calculus II	4
MA 243	Calculus III	4
PS 201	Engineering Physics I	5
PS 202	Engineering Physics II	5
ES 201	Statics	3
ES 302	Solid Mechanics	3
ES 304	Fluid Mechanics	3
AE/ES	Electives (300-400 level)	8
TOTAL		45

Special Requirements:

MA 111, MA 112 and PS 102 may not be applied toward degree requirements in this program. Open electives may be substituted.

Air Force Aerospace Studies

This program provides the background for the individual who desires to enter the Air Force as a military officer. Successful completion of this program qualifies the graduate to be a commissioned officer in the U. S. Air Force.

Required Courses:

Number	Subject	Credits
AF 101	Air Force Aerospace Studies	1
AF 102	Air Force Aerospace Studies	1
AF 201	Air Force Aerospace Studies	1
AF 202	Air Force Aerospace Studies	1
AF 301	Air Force Aerospace Studies	3
AF 302	Air Force Aerospace Studies	3
AF 401	Air Force Aerospace Studies	3
AF 402	Air Force Aerospace Studies	3
	Electives approved by AFROTC	
	Professor of Aerospace Studies	12
	(300-400 level)	17
	Technical or MS Electives	
TOTAL		45

Airport Management

The Area of Concentration in Airport Management is for the person who wants to specialize in this aviation field. The graduate will be prepared to work in areas such as operations or as an airport manager.

Required Courses:

Number	Subject	Credits
MS 112	Management Accounting	3
MA 211	Statistics with Aviation Applications	3
EC 310	Labor Economics	3
MS 313	Personnel Management	3
MS 390	Business Law I	3
AS 401	Airport Development and Operations	3
MS 408	Airport Management	3
MS 409	Airport Construction Project Management	3
MS 412	Airport Planning and Design	3
MS 415	Airline Management	3
MS 421	Small Business Management, OR	
MS 308	Public Administration	3
CE(MS)	Airport Management Cooperative Education AND/OR	
EC/MS	Upper Level Aviation-Oriented Electives	12
TOTAL		45

Air Transportation Management

The Area of Concentration in Air Transportation Management provides the student with specialized knowledge in air transportation. Possible career opportunities are with the commercial airlines, air freight carriers, air charter services, and transportation agencies.

Required Courses:

Number	Subject	Credits
EC 310	Labor Economics	3
EC 420	Economics of Air Transportation	3
MS 311	Marketing	3
MS 313	Personnel Management	3
MS 318	Business Data Processing	3
MS 322	Aviation Insurance	3
MS 331	Transportation Principles	3
MS 401	Management Planning and Control	3
MS 410	Management of Air Cargo	3
MS 415	Airline Management	3
MA 211	Statistics with Aviation Applications	3
CE(MS)	Aviation Management Cooperative Education AND/OR	
EC/MS	Upper Level Aviation Oriented Electives	12
TOTAL		45

Applied Mathematics

The Area of Concentration in Applied Mathematics is designed to provide the graduate with the broad mathematical and scientific background necessary to pursue a career in industry or government. The curriculum provides for the mathematical study of general scientific concepts, principles and phenomena. This program also prepares the student for additional studies at the graduate level.

Required Courses:

Number	Subject	Credits
CT 309	FORTTRAN Programming	3
CT 350	Modeling Using Computers	3
CT 340	Computer Processing of Statistical Data	3
CT 410	Computing Data Structures	3
MA 241	Calculus and Analytical Geometry I	4
MA 242	Calculus and Analytical Geometry II	4
MA 243	Calculus and Analytical Geometry III	4
MA 340	Differential Equations	3
MA 441	Advanced Engineering Math I	3
MA 412	Probability and Statistics	3
MA 430	Linear Algebra and Linear Programming	3
	Technical Electives	9
TOTAL		45

Special Requirements:

The following mathematics and physics courses are required in place of those listed in the vertical outline:

Courses Listed

MA 111
MA 112
PS 102

Courses Required

MA 140
MA 141
PS 201

Management

The individual who desires to enter the aviation field prepared to move into a position of responsibility in management or operations should consider this Area of Concentration. This Area of Concentration provides the student with flexibility beyond the basic management concepts.

Required Courses:

Number	Subject	Credits
EC 310	Labor Economics	3
EC 420	Economics of Air Transportation	3
MS 112	Management Accounting	3
MS 311	Marketing	3
MS 313	Personnel Management	3
MS 318	Business Data Processing	3
MS 331	Transportation Principles	3
MS 390	Business Law I	3
MS 401	Management Planning and Control	3
MS 425	Trends and Current Problems in Air Transportation	3
MA 211	Statistics with Aviation Applications	3

CE(MS)	Aviation Management Cooperative Education AND/OR	12
MS	Upper Level Aviation-oriented Electives	
TOTAL		45

Avionics

The goals of the Avionics Area of Concentration are twofold: first, to provide a technical background in electronics and prepare the student for the FCC Second Class Radiotelephone License examination; second, to provide highly specialized technical knowledge in the theory of operation, troubleshooting and repair of avionics equipment. Special attention is given to laboratory presentations and hands-on participation by the students.

Required Courses:

Number	Subject	Credits
EL 101	Basic Concepts and D-C Circuits	4
EL 102	Fundamentals of A-C and A-C Circuit Analysis	4
EL 103	Semiconductor Fundamentals	4
EL 207	Basic Radiotelephone Equipment Theory and Operation	3
EL 211	Basic Electronic Circuits and Systems	4
EL 221	Intro. to Pulse and Digital Circuits	4
EL 311	Advanced Electronic Circuits and Systems	4
EL 321	Advanced Digital Circuits and Systems	4
AV 311	Aircraft Communication and Navigation Systems	3
AV 321	Aircraft Pulse Systems	3
AV 322	Aircraft Radar and Autopilot Systems	3
AV 340	Avionics Equip. Troubleshooting and Repair Lab	2
AV 341	Advanced Avionics Equip. Troubleshooting and Repair Lab	2
	Electives	1
TOTAL		45

Special Requirements:

PS 103 is required in place of PS 102.

Computer Technology

The increasing use of computers in all phases of the aviation industry makes this Area of Concentration a highly relevant program. The program can be applied to manufacturing, marketing, or general operation of aircraft and the many related career areas. The student augments the core programs of Aeronautical Science, General Science and Humanities with training in the theory and utilization of computers.

Required Courses:

Number	Subject	Credits
CT 309	FORTAN Programming	3
CT 310	COBOL Programming	3
CT 312	Assembly Language Programming	3
CT 316	Structured Programming	3

CT 320	Advanced COBOL Programming	3
MA 222	Business Statistics	3
MS 318	Business Data Processing	3
MS 319	Management Information Systems	3
CT 350	Modeling Using Computers	3
CT 410	Computing Data Structures	3
CT 420	Operating Systems	3
	Electives	12
TOTAL		45

Flight — Fixed Wing

If this Area of Concentration is chosen, one must take the courses necessary to qualify as a Commercial Pilot with the Instrument and Multi-engine ratings or Certified Flight Instructor's rating. Flight credits may be accepted from a regionally accredited college or university or may be awarded to: military pilots current within 12 months of matriculation or current commercial airline pilots who hold the appropriate FAA ratings. With the exception of military or commercial airline pilots, students must complete at least one flight course with Embry-Riddle. The Division of Flight Technology provides flight evaluations to validate other types of previous flight experience for credit. Minimum experience to qualify for a flight evaluation is the Commercial Pilot License.

Required Courses:

Number	Subject	Credits
FA 102	Primary Flight	2
FA 103	Basic Flight	2
FA 203	Intermediate Flight	2
FA 204	Advanced Flight I	2
FA 305/311	Advanced Flight II	2
FA 340	Multi Engine, OR	
FA 313	Advanced Flight III, OR	
FA 400	Flight Instructor	1
AS 202	Navigation II	3
AS 210	Aircraft Systems and Components	3
AS 309	Basic Aerodynamics	3
AS 310	Aircraft Performance	3
AS 311	Aircraft Engines—Turbines	3
AS 404	Principles of Instruction I (To be taken with FA 400)	3
AV 301	Avionics for Aviators	3
PS 104	Technical Physics II	3
	Electives	10
TOTAL		45

Special Requirements:

PS 103 must be taken instead of PS 102.
(AS 203 replaces AS 211)

Flight—Rotary Wing

Rotary wing training is not offered by the University, but training received in the military or qualified civilian schools is accepted for credit with the FAA certificates for a Commercial Pilot with Instrument rating. Commercial pilots with Rotorcraft-Helicopter and Instrument-Helicopter ratings may receive credit for equivalent courses listed below marked with an asterisk after satisfactory evaluation of their experience.

Required Courses:

Number	Subject	Credits
*FA 102	Primary Flight	2
*FA 103	Basic Flight	3
*FA 203	Intermediate Flight	2
*FA 204	Advanced Flight I	2
*FA 305	Advanced Flight II (AS 203 replaces AS 211)	2
AS 202	Navigation II	3
AS 210	Aircraft Systems and Components	3
AS 309	Basic Aerodynamics	3
AS 310	Aircraft Performance	3
AS 311	Aircraft Engines—Turbine	3
AV 301	Avionics for Aviators	3
PS 104	Technical Physics II	3
	Upper Division Electives	4
	Electives	9
TOTAL		45

Special Requirements:

PS 103 must be taken instead of PS 102.

AS 203 replaces AS 211.

Maintenance Technology

The individual who wishes to combine maintenance training and experience with an academic degree program and who may be interested in the supervision of aircraft maintenance activities will find this Area of Concentration fills those requirements. This program integrates the knowledge and experience of aircraft and powerplant maintenance with the broader perspective of management, science and the humanities. The requirements may be met by completing one of the following programs of study:

1. E-RAU Maintenance Technology Certificate—Type 147 (see page 77) plus nine hours upper division open electives.

OR

2. E-RAU Maintenance Technology Certificate—Type 65 (see page 78) plus 9 hours upper division open electives; plus 16 hours of electives selected from the AMT/EL/AV/CT/FA/FT/AS/MS academic disciplines. At least nine of the 16 hours must be upper division.

Military Science

Successful completion of this four-year Army ROTC program guarantees a commission in the U.S. Army. This Area of Concentration is offered in cooperation with Stetson University.

Required Courses:

Number	Subject	Credits
MY 101 and 102	Basic Military Science	4
MY 201 and 202	Basic Military Science	4
MY 301 and 302	Advanced Military Science	4
MY 401 and 402	Advanced Military Science	4
	Electives (Upper Division)	12
	Technical or MS Electives	17
TOTAL		45

Radiotelephone Maintenance Technology

The Radiotelephone Maintenance Technology certificate program offered at European program (USAF) locations consists of a series of theory and laboratory courses in the fundamental principles of electricity, electronics and electronic circuits and systems. The curriculum is designed to assist experienced electrical/electronics personnel in preparing for the Federal Communications Commission radiotelephone operator licensing examinations. The program is designed to prepare the individual for both the FCC Second and First Class Radiotelephone Operators Licenses.

Required Courses:

Number	Subject	Credits
EL 101	Basic Concepts and D-C Circuits	4
EL 102	Fundamentals of A-C and A-C Circuit Analysis	4
EL 103	Semiconductor Fundamentals	4
EL 207	Basic Radiotelephone Equip Theory and Operation	3
EL 211	Basic Electronic Circuits and Systems	4
EL 221	Introduction to Pulse and Digital Circuits	4
EL 206	Advanced Radiotelephone Equip Theory and Operation	3
EL 311	Advanced Electronic Circuits and Systems	4
EL 321	Advanced Digital Circuits and Systems	4
	Electives (Upper Division)	11
TOTAL		45

Aviation Administration Programs

INTRODUCTION

The objective of this program is to prepare the student for administrative positions in the aviation industry, including marketing, operations, manufacturing, sales, public relations and transportation or airport planning. Because of the combined concentration in aviation and management, this degree facilitates growth into managerial positions of ever-increasing responsibility and decision making.

Admission Requirements

There are two ways to enter the Bachelor of Science in Aviation Administration Program:

- I. Students who meet the general University requirements for admission may enroll in the eight trimester curriculum, page 62.
- II. Students who possess one of the following prerequisites may enter the Capstone curriculum, page 63.
 - a. an associate degree (University parallel)
OR,
 - b. an Embry-Riddle Aeronautical University approved aviation related associate degree,
OR,
 - c. 60 trimester/semester credit hours of approved course work which must be comprised of:

Courses	Credits
Communication Skills (English Composition is required and one course from among rhetoric, speech or writing)	6
College Math (algebra, and/or trigonometry and/or calculus)	6
General Education (sciences, economics, humanities/ social sciences, mathematics)	24
Open Electives	9
Electives selected from the following disciplines: finance, accounting, personnel, psychology, maintenance, operations analysis, computer technology, marketing, engineering, business administration, management, transportation	15
TOTAL	<hr/> 60

BACHELOR OF SCIENCE DEGREE AVIATION ADMINISTRATION

Eight Trimester Curriculum:

DEGREE REQUIREMENTS

This curriculum requires 132 credit hours as shown below:

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	HU 120 Communications I	3
	MA 111 College Mathematics for Aviation I	3
	AS 100 Foundations of Aeronautics	4
	AS 101 History of Aviation	3
	AS 307 Flight Physiology	2
		<hr/> 15
SECOND	HU 121 Communications II	3
	MA 112 College Math for Aviation I	3
	MS 200 Principles of Management, OR	
	MS 205 American Business Enterprise	3
	AS 201 Meteorology	3
	SS 210 Introduction to Sociology, OR	
	SS 220 Psychology	3
	PS Elective	3
		<hr/> 18
THIRD	HU 220 Communications III	3
	MA 211 Statistics with Aviation Applications	3
	EC 110 Macroeconomics	3
	AS 303 Government and Aviation	3
	MS 110 Accounting I	3
	MS 305 Management Analysis and Concepts	3
		<hr/> 18
FOURTH	HU 221 Technical Report Writing	3
	CT 205 Introduction to Computers in Aviation, OR	
	CT 209 Introduction to Computers	3
	AS 412 Corporate Industrial Aviation	3
	EC 210 Microeconomics	3
	MS 313 Personnel Management	3
	HU/SS Elective	3
		<hr/> 18
FIFTH	EC 310 Labor Economics	3
	AS 409 Aviation Safety	3
	MS 311 Marketing	3
	MS 308 Public Administration, OR	
	MS 390 Business Law	3
	MS 331 Transportation Principles	3
	CT/MA/MS Elective	3
		<hr/> 18

SIXTH	MS 318	Business Data Processing	3
	EC 420	Economics of Air Transportation, OR	
	MS 410	Management of Air Cargo	3
	HU/SS	Elective	3
	PS	Elective	3
	MS 316	Psychology of Management	3
			<hr/> 15
SEVENTH	AS 405	Aviation Law	3
	MS 315	Finance	3
	MS 405	General Aviation Marketing	3
		Electives	6
			<hr/> 15
EIGHTH	AS 401	Airport Development and Operations	3
	MS 425	Trends and Current Problems in Air Transportation	3
		Electives	9
			<hr/> 15
TOTAL			132

BACHELOR OF SCIENCE DEGREE AVIATION ADMINISTRATION

CAPSTONE CURRICULUM DEGREE REQUIREMENTS

The Bachelor of Science degree in Aviation Administration-Capstone Curriculum requires 72 trimester credit hours. Those students who have completed either 1) an E-RAU approved aviation associate degree, or 2) an approved 60-credit hour associate degree equivalent (See p. 61), or 3) a University parallel associate degree may complete the degree in four trimesters. Students whose prior academic program includes courses within the Capstone Curriculum must take an equivalent number of credit hours from the following:

Approved Alternatives:	AS 201	MS 318
	AS 309	MS 322
	AS 310	MS 390
	AS 401	MS 401
	AS 410	MS 408
	EC 420	MS 410
	MS 308	MS 415
	MS 311	MS 420

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	AS 100 Foundations of Aeronautics	4
	AS 101 History of Aviation	3
	EC 110 Macroeconomics	3
	MS 200 Principles of Management, OR	
	MS 205 American Business Enterprise	3
	AS 307 Flight Physiology	2
	CT 205 Introduction to Computers in Aviation, OR	
	CT 209 Introduction to Computers	3
		<hr/> 18
SECOND	MA 211 Statistics with Aviation Applications	3
	AS 303 Government and Aviation	3
	EC 210 Microeconomics	3
	MS 305 Management Analysis and Concepts	3
	MS 316 Psychology of Management	3
	MS 110 Accounting I	3
		<hr/> 18
THIRD	HU 221 Technical Report Writing	3
	AS 405 Aviation Law	3
	EC 310 Labor Economics	3
	MS 311 Marketing OR	3
	MS 318 Business Data Processing	
	MS 331 Transportation Principles	3
	SS Upper Level Elective	3
		<hr/> 18
FOURTH	AS 409 Aviation Safety	3
	AS 412 Corporate Business Aviation	3
	MS 313 Personnel Management	3
	MS 315 Finance	3
	MS 405 General Aviation Marketing	3
	MS 425 Trends and Current Problems in Air Transportation	3
		<hr/> 18
	TOTAL	72

Aviation Management Programs

INTRODUCTION

The primary objectives of this program are (1) to prepare graduates for a wide variety of staff, operational and executive positions within the various segments of aviation; and (2) to provide a foundation for graduate study. By choosing an appropriate Area of Concentration, each student has the opportunity to tailor his academic program to better meet specific career objectives.

If the student desires an Area of Concentration, he may choose from Air Transportation Management, Airport Management, Flight, Computer Technology, Air Force Aerospace Studies, or Military Science. Area of Concentration requirements are listed under the Aeronautical Studies program.

Three additional Areas of Concentration are under development: Aviation Finance, Aviation Marketing, and Aviation Computer Management Systems.

ADMISSION REQUIREMENTS

Students will be admitted who meet the general university requirements for admission (See Page 15).

DEGREE REQUIREMENTS

The Bachelor of Science degree requires 132 trimester academic credit hours, normally completed within eight trimesters (assuming no transfer credits are applied).

BACHELOR OF SCIENCE DEGREE AVIATION MANAGEMENT

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	* HU 120 Communications I	3
	* SS 110 World History OR	
	* SS 120 American History	3
	* EC 110 Macroeconomics	3
	* MA 120 Quantitative Methods I	3
	* MS 205 American Business Enterprise	3
		<hr/> 15
SECOND	* HU 121 Communications II	3
	* MA 220 Quantitative Methods II	3
	* CT 209 Introduction to Computers	3
	* EC 210 Microeconomics	3
	* MS 110 Accounting I	3
		<hr/> 15
THIRD	* PS 101 Basic Chemistry	3
	* HU 220 Communications III	3
	* HU 250 Logic	3
	* MA 222 Business Statistics	3
	* MS 112 Management Accounting	3
		<hr/> 15
FOURTH	* SS 210 Introduction to Sociology	3
	* SS 220 Introduction to Psychology	3
	* PS 102 Explorations in Physics	3
	* MS 305 Management Analysis and Concepts	3
	EC 310 Labor Economics	3
	MA 320 Decision Mathematics	3
		<hr/> 18
FIFTH	MS 313 Personnel Management	3
	MS 316 Psychology of Management	3
	MS 318 Business Data Processing	3
	* HU 221 Technical Report Writing	3
	MS 331 Transportation Principles	3
		<hr/> 15
SIXTH	HU 340 Introduction to Philosophy	3
	MS 311 Marketing	3
	MS 315 Finance	3
	MS 319 Management Information Systems	3
	MS 401 Management Planning and Control	3
	EC 420 Economics of Air Transportation	3
		<hr/> 18

SEVENTH	MS 390	Business Law I	3
	MS 420	Industrial Management	3
	MS 425	Trends and Current Problems in Air Transportation	3
	* MS	Electives (two for Bachelor, one for Associate)	6
		To be chosen from:	
		MS 322 Aviation Insurance	
		MS 405 General Aviation Marketing	
		MS 408 Airport Management	
		MS 410 Management of Air Cargo	
		MS 415 Airline Management	
		Electives	3
			<hr/>
			18
EIGHTH	* AS 303	Government and Aviation	3
	MS 430	Management Applications	3
		Electives	12
			<hr/>
			18
TOTAL CREDITS			132

ASSOCIATE IN SCIENCE DEGREE AVIATION MANAGEMENT

Those courses required for the Associate in Science in Aviation Management are indicated above with an asterisk (*). This curriculum requires 66 credit hours and can normally be completed within four trimesters, assuming no transfer credits are applied.

AREAS OF CONCENTRATION

As mentioned above, existing areas of concentration are available to the Aviation Management student (Air Transportation Management, Airport Management, Flight, Computer Technology, Air Force Aerospace Studies and Military Science) as outlined in the Aeronautical Studies section of the catalog, Pages 53-61.

Specialization will also be available to the student by selecting from three new areas of concentration which will be available to freshmen entering the B.S. Aviation Management Program in September of 1980.

Aviation Marketing

The student's studies will include such subjects as how to market products and services, travel agencies, customer relations, reservations, ticket counter operations, freight and mail, advertising, response to competition, new markets, sales promotion, conventions, public relations, government agencies and elected officials and emergency situation information control procedures. Additionally, subject to availability of positions, the student may spend time in Cooperative Education (see p. 36) assignments with the marketing staff of an aviation organization.

Aviation Finance

The student's studies will include such subjects as how to utilize Civil Aeronautics Board data to analyze air carriers to include efficiencies and inefficiencies, revenue accounting, accounting computer applications, lease/purchase analysis, internal auditing, asset inventory control practices, budget analysis, economic analysis, cost accounting, corporate finance, airline finance, insurance and taxation. Additionally, subject to availability of positions, the student may spend time in Cooperative Education (see p. 36) assignments with the finance staff of an aviation organization.

Aviation Computer Management Systems

The student's studies will include such subjects as simulation and analysis of major aviation computer-based systems for passenger airline reservations and computer flight planning, modeling using computers and management games concerning marketing and finance. Emphasis will be on management's more effective use of the computer rather than programming and hardware. Additionally, subject to availability of positions, the student may spend time in Cooperative Education (see p. 36) assignments with the aviation management staff personnel, making extensive use of the computer.

Aviation Technology Programs

INTRODUCTION

The Aviation Technology program prepares the student for a career in aviation by coordinating academic courses with Aviation Maintenance Technology AND EITHER Flight OR Avionics training. In addition to receiving the academic degree upon graduation, the student qualifies to be examined for the FAA Airframe and Powerplant Certificate and either the Commercial Pilot Certificate with Instrument and Multi-Engine ratings or the FCC Radiotelephone Operators License (Second and First Class plus Radar Endorsement). In addition to communications and mathematics, management courses are included in the program to provide the necessary background for the graduate to progress into supervisory and management positions.

REQUIRED FLIGHT COURSES

Flight course regulations are the same as for the Aeronautical Science degree program (See Page 47).

DEGREE REQUIREMENTS

The Bachelor of Science degree in Aviation Technology requires that the student demonstrate competency in Airframe and Powerplant Technology AND EITHER Avionics Maintenance Technology OR Flight Technology, PLUS general education and science courses. The degree requires a minimum of 135 semester credit hours which may be met through the following curriculum options.

E-RAU Maintenance Technology Certificate—Type 147 (See Page 77) plus a valid FAA Airframe and Powerplant Mechanics License;

OR

E-RAU Maintenance Technology Certificate—Type 65 (See Page 78) and a valid FAA Airframe and Powerplant Mechanics License, PLUS 16 hours of upper division electives selected from the AMT/AV/EL/CT/FA/AS/MS academic disciplines;

AND EITHER

E-RAU Avionics Maintenance Certificate (See Page 78);

OR

E-RAU Flight Technology Certificate (See page 71);

AND

The Bachelor of Science in Aviation Technology—Core Curriculum as listed below.

BACHELOR OF SCIENCE DEGREE AVIATION TECHNOLOGY

Number	Subject	Credits
Aeronautical Science		
AS 101	History of Aviation	3
AS 303	Government and Aviation	3
		<hr/>
		6
Mathematics		
MA 111	College Math for Aviation I	3
MA 112	College Math for Aviation II	3
		<hr/>
		6
Physical Science		
PS 101	Basic Chemistry	3
PS 103	Technical Physics I	3
PS 104	Technical Physics II	3
		<hr/>
		9
Economics		
EC 110	Macroeconomics or	
EC 210	Microeconomics	3
		<hr/>
		3
Humanities		
HU 120	Communications I	3
HU 121	Communications II	3
HU 220	Communications III	3
HU 221	Technical Report Writing	3
HU 250	Introduction to Logic	3
		<hr/>
		15
Social Science		
SS 220	Introduction to Psychology	3
		<hr/>
		3
Computer Technology		
CT 209	Introduction to Computers	3
		<hr/>
		3

With E-RAU Avionics Maintenance Certificate, select 18 hours from courses shown below.

With E-RAU Flight Technology Certificate, select 13 hours from courses shown below.

MS 110	Accounting I	3
MS 112	Management Accounting OR	
MS 390	Business Law I	3
MS 205	American Business Enterprise	3
MS 305	Management Analysis and Concepts	3
MS 313	Personnel Management	3
MS 316	Psychology of Management	3
MS 405	Aviation Marketing	3
AS 405	Aviation Law	3
AS 412	Corporate Industrial Aviation	3
TOTAL CORE CREDITS (AV/FT)		63/58

E-RAU FLIGHT TECHNOLOGY CERTIFICATE

This certificate requires successful completion of the following courses:

Number	Subject	Credits
FA 102	Primary Flight	2
FA 103	Basic Flight	2
FA 203	Intermediate Flight	2
FA 204	Advanced Flight I	2
FA 305/311	Advanced Flight II	2
FA 340	Multi-Engine Flight OR	
FA 313	Advanced Flight III	1
AS 100	Foundations of Aeronautics	4
AS 102	Navigation I	3
AS 103	Flight Rules and Regulations	3
AS 201	Meteorology	3
AS 202	Navigation II	3
AS 307	Flight Physiology	2
AS 309	Basic Aerodynamics	3
AS 310	Aircraft Performance	3
AS 408	Flight Safety	3
AV 301	Avionics for Aviators	3
TOTAL ACADEMIC CREDITS		41

Aviation Maintenance Technology Programs

Each of these programs combines the highly technical courses of Maintenance Technology with academic courses that relate to specific careers within the field. The Airframe and Powerplant curriculum provides the graduate with both theoretical and practical knowledge, and the manipulative ability to repair airframes, engines, and systems. The Avionics program prepares the graduate to enter one of the fastest growing areas in Aviation Maintenance with a FCC Second Class License with Radar endorsement.

The demand for Aviation Maintenance Technicians exists throughout the industry, and the graduate of an Aviation Maintenance Technology Program may pursue a career in general or commercial aviation, manufacturing, engineering and research, corporate and business aviation, and governmental aviation agencies.

ASSOCIATE DEGREE AVIATION MAINTENANCE TECHNOLOGY

INTRODUCTION

This program is designed to prepare the student for the FAA Airframe and Powerplant License. The curriculum leads to the Associate Degree in Aviation Maintenance Technology, providing the individual with proficiency in all activities associated with general maintenance, overhaul, repair, and modification of aircraft. It also affords an advantage toward obtaining managerial positions in various maintenance career fields. Further, the credits earned in obtaining the associate degree may be applied toward the pursuit of certain baccalaureates.

DEGREE REQUIREMENTS

Degree requirements for the Associate degree in Aviation Maintenance Technology are outlined in the vertical listing below:

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST (General Aeronautics)		
	AMT 101 Physical Mathematics	2
	AMT 102 Aviation Regulations, Records and Documents	2
	AMT 103 Basic Electricity	3
	AMT 104 Aircraft Servicing Procedures	2
	AMT 105 Aviation Material	3
		<hr/> 12

SECOND (Airframe Phase I)

AMT 121	Aircraft Structures & Sheet Metal Fab	4
AMT 122	Aircraft Wood, Fabric and Finishes	2
AMT 123	Aircraft Welding, Assembly, and Rigging	4
AMT 124	Aircraft Instruments & Communication Navigation	2

12

THIRD (Airframe Phase II)

AMT 321	Aircraft Electrical Systems	4
AMT 322	Hydraulic and Pneumatic Systems	2
AMT 323	Aircraft Environmental and Fuel Sys.	3
AMT 324	Aircraft Landing Gear Systems	3

12

FOURTH (Powerplant I)

AMT 151	Aircraft Reciprocating Engines	3
AMT 152	Aircraft Powerplant Systems	3
AMT 253	Engine Electrical and Ignition Systems	3
AMT 154	Propellers	2
AMT 254	Propeller Systems	1

12

FIFTH (Powerplant II)

AMT 351	Reciprocating Engine Overhaul	4
AMT 252	Engine Installation and Operation	2
AMT 353	Turbine Engine Sys., Eng. Overhaul & Op.	4
AMT 255	Turbine Engine Theory, Design & Maintenance	2

12

SIXTH

HU 120	Communications I	3
MA 111	College Math for Aviation I	3
Electives, to be chosen from:		6

AS 100 Foundations of Aeronautics (4 credits)

AS 101 History of Aviation (3 credits)

AV 301 Avionics for Aviators (3 credits)

MS 110 Accounting I (3 credits)

HU 121 Communications II (3 credits)

HU 220 Communications III (3 credits)

12

TOTAL CREDITS 72

Aviation Maintenance Management Program

INTRODUCTION

This program combines the basic education and specialized knowledge that relate to a career in the aviation maintenance management field. The curriculum prepares the graduate for middle and upper level maintenance management positions in such aviation industry career fields as airlines, fixed base operators, aircraft companies, corporate business aircraft operators and government. Employment opportunities include:

Operations Manager
Maintenance Department Director
Assembly Foreman
Service Manager
Inspector Supervisor
Technical Report Writer
Field Representative

Instrument Workshop Supervisor
Overhaul Shop Manager
Fixed Base Operator
Safety Engineer-Maintenance
Management
Customer Service
Work Controller

DEGREE REQUIREMENTS

Bachelor of Science Degree in Aviation Maintenance Management requires:

Successful completion of the E-RAU Maintenance Technology Certificate—Type 147 curriculum (See Page 77);

OR

Successful completion of the E-RAU Maintenance Technology Certificate—Type 65 curriculum (See Page 78), plus 16 hours of electives selected from the AMT/AV/CT/FA/EL/AS/MS academic disciplines;

OR

Successful completion of the E-RAU Avionics Maintenance Certificate (See Page 78) curriculum;

AND

102 credit hours of general studies and Management courses as shown below in the vertical listing (Core Curriculum).

Persons holding Airframe or Powerplant or both Airframe and Powerplant Licenses should see p. 20 for information regarding Advanced Standing.

BACHELOR OF SCIENCE IN AVIATION MAINTENANCE MANAGEMENT

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	* HU 120 Communications I	3
	* SS 110 World History OR	
	SS 120 American History	3
	* MA 111 College Mathematics for Aviation I	3
	* MS 110 Accounting I	3
	* MS 205 American Business Enterprise	3
		<hr/> 15
SECOND	* HU 121 Communications II	3
	PS 101 Basic Chemistry	3
	* MA 112 College Mathematics for Aviation II	3
	* EC 110 Macroeconomics	3
	* MS 112 Management Accounting	3
		<hr/> 15
THIRD	* HU 220 Communications III	3
	* MA 211 Statistics with Aviation Applications	3
	* EC 210 Microeconomics	3
	* PS 102 Explorations in Physics	3
	HU 250 Introduction to Logic	3
	* MS 305 Management Analysis and Concepts	3
		<hr/> 18

FOURTH	MS 390	Business Law I	3
	* CT 209	Introduction to Computers	3
	EC 310	Labor Economics	3
	MS 313	Personnel Management	3
	SS 220	Introduction to Psychology	3
	* HU 221	Technical Report Writing	3
			<hr/> 18
FIFTH	SS 210	Introduction to Sociology	3
	MS 316	Psychology of Management	3
	MS 401	Management Planning and Control	3
	AS 303	Government Aviation	3
		Humanities Elective (upper division)	3
		Social Science Elective	3
			<hr/> 18
SIXTH	MS 420	Industrial Management	3
		Electives (upper division)	9
		MS EC Electives to be chosen from:	6
		MS 311 Marketing	
		MS 322 Aviation Insurance	
		MS 331 Transportation Principles	
		MS 405 General Aviation Marketing	
		MS 410 Management of Air Cargo	
		MS 415 Airline Management	
		MS 421 Small Business	
		Management	
		EC 420 Economics of Air	
		Transportation	
			<hr/> 18
TOTAL CREDITS			102

E-RAU MAINTENANCE TECHNOLOGY CERTIFICATE TYPE 147 PROGRAM

To meet the requirements for this certificate the student must successfully complete the following courses:

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST (General Aeronautics)		
	AMT 101 Physical Mathematics	2
	AMT 102 Aviation Regulations, Records and Documents	2
	AMT 103 Basic Electricity	3
	AMT 104 Aircraft Servicing Procedures	2
	AMT 105 Aviation Material	3
		<hr/> 12
SECOND (Airframe Phase I)		
	AMT 121 Aircraft Structures and Sheet Metal Fabrication	4
	AMT 122 Aircraft Wood, Fabric, and Finishes	2
	AMT 223 Aircraft Welding, Assembly, and Rigging	4
	AMT 124 Aircraft Instruments and Communications/Navigation	2
		<hr/> 12
THIRD (Airframe Phase II)		
	AMT 321 Aircraft Electrical Systems	4
	AMT 322 Hydraulic and Pneumatic Systems	2
	AMT 323 Aircraft Environmental and Fuel Systems	3
	AMT 324 Aircraft Landing Gear Systems	3
		<hr/> 12

FOURTH (Powerplant Phase I)

AMT 151	Aircraft Reciprocating Engines	3
AMT 152	Aircraft Powerplant Systems	3
AMT 253	Engine Electrical and Ignition Systems	3
AMT 154	Propellers	2
AMT 254	Propeller Systems	1

 12
FIFTH (Powerplant Phase II)

AMT 351	Reciprocating Engine Overhaul	4
AMT 252	Engine Installation and Operation	2
AMT 353	Turbine Engine Systems, Engine Overhaul and Operations	4
AMT 255	Turbine Engine Theory, Design, and Maintenance	2

 12

TOTAL CREDITS 60

E-RAU MAINTENANCE TECHNOLOGY CERTIFICATE TYPE 65 PROGRAM

This certificate requires successful completion of the following courses:

AMT 200	General Aeronautics and Applications	4
AMT 270	Airframe Structures and Applications	4
AMT 280	Powerplant Theory and Applications	4
AMT 370	Airframe Systems and Applications	4
AMT 380	Aircraft Propulsion Systems & Applications	4

 20

For information regarding advanced standing for Type 65 course requirements see p. 20.

E-RAU AVIONICS MAINTENANCE CERTIFICATE

EL 101	Basic Electronic Concepts and D.C. Circuits
EL 102	Fundamentals of A.C. and A.C. Circuit Analysis
EL 103	Semiconductor Fundamentals
EL 207	Basic Radiotelephone Equipment Theory and Operation
EL 211	Basic Electronics Circuits and Systems
EL 221	Introduction to Pulse and Digital Circuits
EL 311	Advanced Electronic Circuits and Systems
EL 321	Advanced Digital Circuits and Systems
AV 311	Aircraft Communications and Navigation
AV 321	Aircraft Pulse Systems
AV 322	Aircraft Radar and Autopilot Systems
AV 340	Avionics Equipment Troubleshooting and Repair Lab
AV 341	Advanced Avionics Equipment Troubleshooting and Repair Lab

Special Requirements:

PS 103 is required in place of PS 102.

ADVANCED STANDING:

Students holding FAA Airframe certification may petition for advanced standing in the E-RAU Maintenance Technology Certificate—Type 65 program and receive credit for AMT 200*, AMT 270 and AMT 370.

Students holding current FAA Powerplant certification may petition for advanced standing in the E-RAU Maintenance Technology Certificate—Type 65 program and receive credit for AMT 200*, AMT 280 and AMT 380.

Students who have 18 months on-the-job experience (after the completion of course work) in an aircraft maintenance AFSC/MOS or 30 months experience (after completion of course work) in an aircraft maintenance AFSC/MOS may receive credit for the following courses as appropriate:

AMT 355 Aircraft Maintenance Practicum (eight credit hours)

AMT 455 Adv Aircraft Maintenance Practicum (eight credit hours).

Individuals lacking on-the-job experience will fulfill the credit hours requirement with upper division electives selected from the AMT/CT/AVEL/FA/AS/MS academic disciplines.

*Duplicate credit for AMT 200 will not be awarded for holders of both an Airframe and Powerplant Certificate.

ASSOCIATE IN SCIENCE DEGREE AVIATION MAINTENANCE MANAGEMENT

This program requires the following:

Successful completion of the E-RAU Maintenance Technology Certificate—Type 147 curriculum;

OR

Successful completion of the E-RAU Maintenance Technology Certificate—Type 65 curriculum, plus 16 hours of electives selected from the AMT/CT/FA/EL/AS/MS academic disciplines;

OR

Successful completion of the E-RAU Avionics Maintenance Certificate curriculum;

AND

54 hours of general studies and Management courses as indicated by asterisks (*) in the Bachelor of Science vertical listing on pp. 75–76.

Persons holding Airframe or Powerplant or both Airframe and Powerplant Licenses should see p. 20 for information regarding Advanced Standing.

ASSOCIATE IN SCIENCE DEGREE AIRCRAFT MAINTENANCE

INTRODUCTION

This program is designed to meet the needs of individuals whose backgrounds may include a variety of experience, skills, and FAA ratings. The program can accommodate individuals with no aircraft maintenance experience, those who hold either the FAA Airframe or Powerplant License, and persons holding both the Airframe and Powerplant License. The basic Airframe and Powerplant foundation may be achieved through either of the two alternatives outlined below, and subsequently the student studies academic courses leading to the associate degree, enabling the graduate to more effectively participate in his career area. Persons holding Airframe or Powerplant or both Airframe and Powerplant Licenses should see p. 20 for information regarding Advanced Standing.

DEGREE REQUIREMENTS

The Associate in Science Degree in Aircraft Maintenance requires the completion of 36 designated academic credit hours in addition to one of the following maintenance programs:

E-RAU Maintenance Technology Certificate—Type 147 (See Page 77)

OR

E-RAU Maintenance Technology Certificate—Type 65 (See Page 78), plus 16 credit hours of electives selected from the AMT/AV/CT/FT/AS/MS academic disciplines (See Page 20, for Advanced Standing Criteria).

The 36 academic credit hours in the areas of Humanities, Science, and Management required of candidates in this degree program are as follows:

TRIMESTER	COURSE NUMBER/TITLE		CREDITS
FIRST	HU 120	Communications I	3
	EC 110	Macroeconomics	3
	MA 111	College Mathematics for Aviation I	3
	MS 110	Accounting I	3
	AS 101	History of Aviation	3
	OR		
	AS 303	Government and Aviation	3
	MS 205	American Business Enterprise	3
			<hr/> 18
SECOND	MS 305	Management Analysis and Concepts	3
	MA 112	College Math for Aviation II	
	OR		
	MA 211	Statistics with Aviation Applications	3
	PS 102	Explorations in Physics	3
	HU 121	Communications II	3
	CT 209	Introduction to Computers	
	OR		
	CT 205	Introduction to Computers in Aviation	3
	SS 220	Introduction to Psychology	3
			<hr/> TOTAL CREDITS 18

All of the courses in the Associate in Science degree in Aircraft Maintenance are creditable toward the Bachelor of Science degrees in Aviation Maintenance Management, Aviation Technology, and Aviation Administration.

ASSOCIATE IN SCIENCE DEGREE AVIONICS MAINTENANCE TECHNOLOGY

INTRODUCTION

This program provides the student with both a highly technical electronics-avionics background and a non-technical college academic background. The electronics and avionics courses (totaling 44 trimester credit hours) prepare the student for the 2nd Class FCC Radiotelephone Operators License Examination. They also prepare the student to enter into the rapidly growing field of avionics maintenance, troubleshooting and repair. The non-technical college academic courses (totaling 41 trimester credit hours) increase the student's overall knowledge and greatly enhance career potential.

Career fields for the graduate include technical and supervisory positions in airline avionics equipment repair facilities, fixed base operation avionics shops, avionics manufacturing facilities, and applicable governmental agencies.

DEGREE REQUIREMENTS

Candidates for the Avionics Maintenance Technology Associate Degree Program must complete 85 trimester hours in the areas of electronics, avionics, humanities, management, mathematics and science, as shown on the next page.

All electronics (EL) and avionics (AV) courses are creditable toward a Bachelor of Science Degree in Aeronautical Studies, Aviation Maintenance Management, and Aviation Technology with an Area of Concentration in Avionics Maintenance Technology.

ADMISSIONS

General University admission requirements apply (See Page 15).

ADVANCED STANDING

Students with electronics or avionics background training (civilian, military or approved schools) may request advanced standing. Applications for advanced standing must be submitted to the Chairman of the Avionics Division during the first trimester of enrollment. Requests will be evaluated on an individual basis.

Advanced standing and transfer credit will be authenticated by the Dean, College of Aviation Technology, and validated by the Campus Records Office. An Evaluation Form will be provided for the student.

TRANSFER OF CREDIT

All electronics, avionics and academic credits taken at other institutions will be evaluated in accordance with general University policies.

TRIMESTER	COURSE NUMBER/TITLE		CREDITS
FIRST	EL 101	Basic Electronic Concepts and D.C. Circuits	4
	EL 102	Fundamentals of A.C. and A.C. Circuit Analysis	4
	ET 101	Engineering Graphics I	2
	MA 111	College Mathematics for Aviation I	3
	HU 120	Communications I	3
			<hr/> 16
SECOND	EL 103	Semiconductor Fundamentals	4
	EL 221	Introduction to Pulse and Digital Circuits	4
	MS 205	American Business Enterprise	3
	MA 112	College Mathematics for Aviation II	3
	HU 121	Communications II	3
			<hr/> 17
THIRD	EL 211	Basic Electronics Circuits and Systems	4
	EL 321	Advanced Digital Circuits and Systems	4
	PS 103	Technical Physics	3
	MS 110	Accounting I	3
	MA 300	Applied Logic	3
			<hr/> 17
FOURTH	EL 311	Advanced Electronic Circuits and Systems	4
	AV 311	Aircraft Communications and Navigation Systems	3
	AV 321	Aircraft Pulse Systems	3
	AV 340	Avionics Equipment Troubleshooting and Repair Lab	2
	EC 110	Macroeconomics	3
	SS 220	Introduction to Psychology	3
			<hr/> 18
FIFTH	AV 341	Advanced Avionics Equipment Troubleshooting and Repair Lab	2
	AV 322	Aircraft Radar and Autopilot Systems	3
	EL 207	Basic Radiotelephone Equipment Theory and Operation	3
	MS 305	Management Analysis and Concepts	3
	CT 209	Introduction to Computers	3
	AS 101	History of Aviation	3
			<hr/> 17
TOTAL CREDITS			85

Aviation Computer Technology Programs

INTRODUCTION

The Bachelor of Science degree in Computer Technology is designed to prepare the student for a career in applying and using digital computers. Career areas include engineering programming, business programming, data processing systems analysis, microprocessor applications programming, and aviation applications programming. The student is exposed to a solid foundation of mathematics, physics, chemistry and humanities, plus a core curriculum of Computer Technology courses. The student then must choose an Area of Concentration, further focusing on his specific field of interest. Choices for Area of Concentration include applied programming, applied mathematics, avionics, microprocessor applications, engineering science, and management.

DEGREE REQUIREMENTS

The Bachelor of Science degree in Computer Technology can be earned in eight trimesters. A minimum of 133 trimester/semester hours of credit is required, as is a minimum cumulative grade point average of 2.0 on a scale of 4.0.

The core program of the degree consists of 94 credit hours, distributed as shown in the following disciplines:

Discipline	No. of Hours
Computer Technology	22
Humanities	15
Management	9
Mathematics	19
Physical Sciences	7
Social Studies	9
Economics	3
Aeronautical Science	10
TOTAL	94

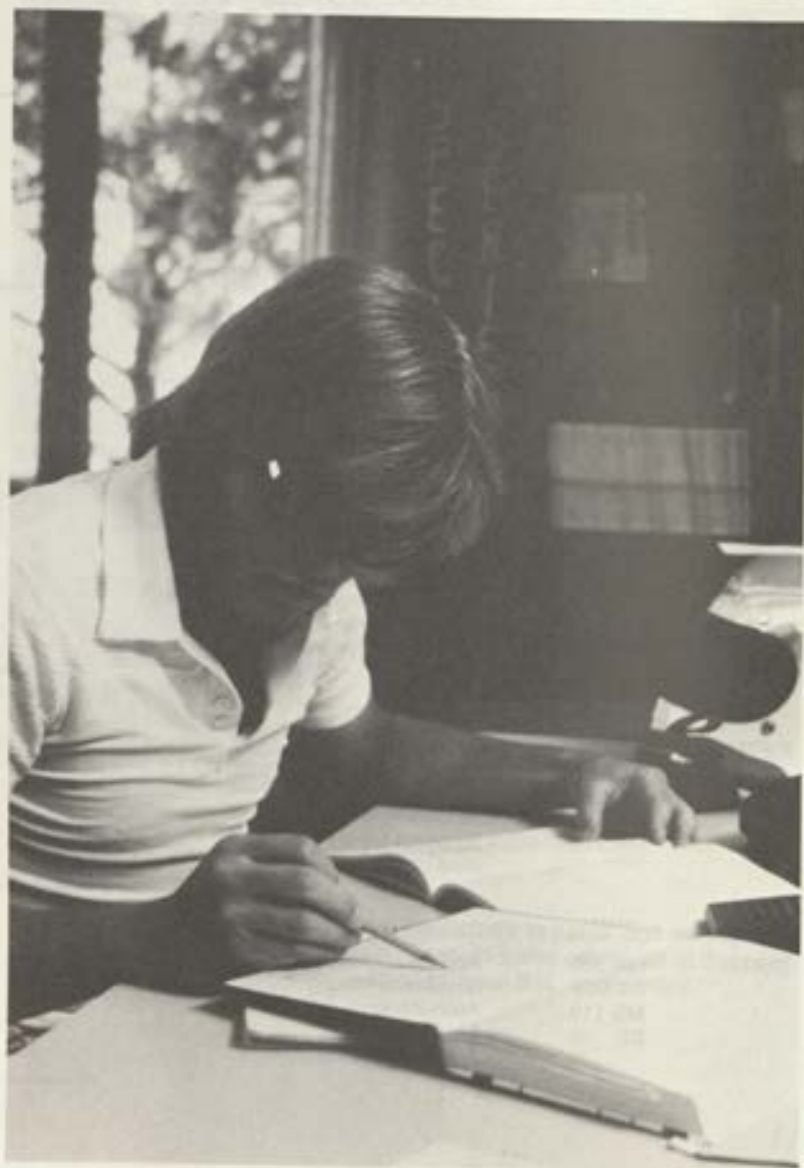
40 HOURS UPPER LEVEL

A total of 40 hours credit must be earned in junior and senior level courses (300 or 400 designated courses). In some cases, all of the open electives must be upper level courses to meet this requirement.

AVIATION COMPUTER TECHNOLOGY CURRICULUM

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	HU 120	Communications I
	SS 110	World History OR
	SS 120	American History
	MA 140	College Algebra
	MA 141	Trigonometry
	CT 101	Introduction to Keyboard Ops
	CT 209	Introduction to Computers OR
	CT 210	Computer Programming for Engineers
	HU 250	Logic, OR
	HU 340	Introduction to Philosophy
		<hr/> 18
SECOND	HU 121	Communications II
	AS 100	Foundations of Aeronautics
	MA 241	Calculus I
	CT 309	FORTTRAN Programming
	MS 205	American Business Enterprise
		<hr/> 17
THIRD	HU 220	Communications III
	PS 102	Explorations in Physics
	MA 242	Calculus II
	CT 310	COBOL Programming
		Area of Concentration
		<hr/> 16
FOURTH	AS 303	Government and Aviation
	HU 221	Technical Report Writing
	CT 312	Assembly Language Programming
	EC 210	Microeconomics
		Area of Concentration
		<hr/> 16
FIFTH	PS 105	Chemistry I
	CT 410	Computing Data Structures
	MA 222	Business Statistics OR
	MA 412	Probability and Statistics
	MS 318	Business Data Processing
		Area of Concentration
		<hr/> 17
SIXTH	MA 300	Applied Logic
	CT 316	Structured Programming
	MS 110	Accounting I
	SS	Electives
		Area of Concentration
		<hr/> 16

SEVENTH	CT 420	Operating Systems	3
	AS 201	Meteorology	3
	SS	Electives	3
		Area of Concentration	7
			<hr/>
			16
EIGHTH	Area of Concentration		17
			<hr/>
TOTAL			133



AREA OF CONCENTRATION—APPLIED MATHEMATICS

The Area of Concentration in Applied Mathematics is designed to provide the graduate with the broad mathematical and scientific background necessary to pursue a career in computing with mathematics/science emphasis. Possible career areas include engineering/scientific programming and system analysis; statistical programming and analysis.

Required Courses:

Number	Subject	Credits
MA 243	Calculus III	4
MA 340	Differential Equations	3
MA 430	Linear Algebra	3
MA 441	Advanced Engineering Mathematics I	3
MA 443	Complex Variables	3
CT 430	Numerical Analysis	3
CT 435	Computer Graphics I	3
	Mathematics Electives	6
	AS Electives	3
	General Electives	8
TOTAL		39

Special Requirements:

MA 412 *must* be taken in the core requirements with this area of concentration (in lieu of MA 222).



AREA OF CONCENTRATION—APPLIED PROGRAMMING

Students in this area of concentration will be exposed to the practical, applied aspects of computing techniques as they are utilized in the business and science communities. Information systems, COBOL and FORTRAN applications, and telecommunications systems are dealt with. Graduates of applied programming will thus be equipped with a background preparing them for jobs in the computer field, particularly computer jobs in the aviation industry.

Required Courses:

Number	Subject	Credits
CT 320	Advanced COBOL Programming	3
CT 350	Modeling Using Computers	3
CT 360	Advanced FORTRAN Applications	3
CT 435	Computer Graphics I	3
CT 440	Data Base Management Systems	3
CT 450	Real-Time Systems	3
CT 460	Telecommunications Systems	3
MS 319	Management Information Systems	3
CT 471	Air Traffic Control Computing Systems <i>OR</i>	
CT 470	Airborne Computing Systems	3
	AS Electives	6
	Electives	6
TOTAL		39

AREA OF CONCENTRATION—MANAGEMENT

A heavy emphasis on management skills prepare the student for a job in commercial/management information systems industry.

Required Courses:

Number	Subject	Credits
EC 310	Labor Economics	3
MS 305	Management Analysis and Concepts	3
MS 311	Marketing	3
MS 313	Personnel Management	3
MS 315	Finance	3
MS 319	Management Information Systems	3
MS 401	Management Planning and Control	3
MS 420	Industrial Management	3
MA 320	Decision Mathematics	3
	AS Electives	6
	CT Electives	6
TOTAL		39

AREA OF CONCENTRATION—AVIONICS

Prepares the student for a career involving the application of digital computers to communication, navigation and display equipment in the aviation industry.

Required Courses:

Number	Subject	Credits
EL 101	Basic Electronic Concepts and DC Circuits	4
EL 102	Fundamentals of AC and AC Circuit Analysis	4
EL 103	Semiconductor Fundamentals	4
EL 211	Basic Electronics Circuits and Systems	4
EL 221	Introduction to Pulse and Digital Circuits	4
EL 321	Advanced Digital Circuits and Systems	4
EL 311	Advanced Electronic Circuits and Systems	4
AV 311	Aircraft Communications and Navigation Systems	3
AV 321	Aircraft Pulse Systems	3
AV 322	Aircraft Radar and Autopilot Systems	3
AV 340	Avionics Equipment Troubleshooting and Repair Lab	2
TOTAL		39

Special Requirement:

PS 103 must be taken in place of PS 102.

AREA OF CONCENTRATION—MICROPROCESSOR TECHNOLOGY

This Area of Concentration provides for a comprehensive study of state of the art microprocessor technology and its applications in aviation and industry.

Required Courses:

Number	Subject	Credits
EL 101	Basic Electronic Concepts	4
EL 102	Fundamentals of AC and AC Circuit Analysis	4
EL 103	Semiconductor Fundamentals	4
EL 211	Basic Electronics Circuits and Systems	4
EL 221	Introduction to Pulse and Digital Circuits	4
EL 321	Advanced Digital Circuits and Systems	4
CT 435	Computer Graphics I	3
CT 450	Real-Time Systems	3
CT 460	Telecommunications Systems	3
CT 470	Research Project in Microprocessor Applications	3
	Technical Electives	3
TOTAL		39

AREA OF CONCENTRATION—ENGINEERING SCIENCE

This curriculum prepares the student for work as a programmer or programmer/analyst in the highly technical field of Engineering Computer Programming.

Required Courses:

Number	Subject	Credits
MA 243	Calculus III	4
ES 201	Statics	3
ES 302	Solid Mechanics	3
ES 303	Dynamics	3
ES 304	Fluid Mechanics	3
ES 305	Thermodynamics	3
ES 404	Electrical Engineering I with laboratory	4
MA 340	Differential Equations	3
ET 101	Engineering Graphics	2
CT 430	Numerical Analysis	3
	AS Electives	6
	AE/ES/ET/CT Technical Electives	3
TOTAL		40

Special Requirements

PS 201 must be taken in lieu of, or in addition to, MA 140 and MA 141. Also, PS 202 must be taken in lieu of PS 103.



Professional Aeronautics Programs

INTRODUCTION

Associate and baccalaureate Professional Aeronautics programs are continuing education degree programs. They are developed to fulfill the educational needs of highly skilled professionals employed in selected aeronautical fields. These programs combine the formal training, directed study and professional work experience in a specific area of aeronautical technology with studies in the liberal arts, science and management. The programs are designed to prepare the student to assume added responsibilities within his field of professional competence. The baccalaureate program prepares students to enter graduate study programs in business and management, if desired.

ADMISSION REQUIREMENTS

Admission to Professional Aeronautics degree programs is limited to individuals with aviation skill identified herein as an approved area of concentration. A high school diploma or equivalent is required of all applicants.

TRANSFER CREDIT

Students who have previously completed college work may request an evaluation of their college transcript through the Dean of Admissions and Records Office.

ADVANCED STANDING

Credit will be granted to enrolled students for the formal training, directed study and experience in a professional area of aeronautical technology validated by the University. Credit toward the baccalaureate will be awarded when appropriate documentation is provided indicating that the student has attained the level of qualification required in an approved Area of Concentration. Credit toward the associate degree will be awarded upon verification of completion of certain formal training and 18 months of work experience in an approved Area of Concentration.

BACHELOR OF PROFESSIONAL AERONAUTICS

DEGREE REQUIREMENTS

The Bachelor of Professional Aeronautics degree program requires 129 credit hours, including the credit hours granted on the basis of professional qualifications. Courses to be taken to earn this degree are indicated on Page 96.

PROGRAM DESCRIPTION

The curriculum requires studies in humanities and social sciences, mathematics and physical sciences, computer technology, aeronautical sciences, and economics and management.

Areas of Concentration which have been approved toward the Bachelor of Professional Aeronautics degree, the number of credit hours granted on the basis of at least 48 months on the job experience (unless otherwise specified) and professional qualifications are as follows:

Air Traffic Control Technology (64 Credit Hours):

Technicians who have attained journeyman level qualification as flight service station specialists, en route air traffic controllers, or terminal air traffic controllers (on-job-training [OJT] not applicable).

Airways Facilities Technology (64 Credit Hours):

Technicians who have attained journeyman level in computers, navigational aids, communications, radar, or Navy airways maintenance career fields.

Airline Command Pilot (64 Credit Hours):

This Area of Concentration is open to individuals who possess the following qualifications and experience: (1) currently employed as a pilot by a major airline and qualified to fly as Captain; (2) hold an FAA Airline Transport Pilot Certificate with at least one type rating in a current air carrier aircraft; and (3) have a minimum of 5,000 flight hours as Pilot-in-Command or Second-in-Command in aircraft with a maximum certificated gross takeoff weight of more than 70,000 pounds.

Air Carrier Pilot (48 Credit Hours):

Individuals who are employed by a major airline (defined as an airline operation under FAR Part 121) as Pilot, First Officer, or Second Officer, and have a minimum of 1,000 hours as Pilot-in-Command or Second-in-Command in current air carrier aircraft.

Corporate Pilot (48 Credit Hours):

Individuals who are employed as a pilot in corporate aviation, possess a type rating, and have a minimum of 1,000 hours as Pilot-in-Command or Second-in-Command in pressurized, turbine-powered aircraft.

Commuter Airline Pilot (32 Credit Hours):

Individuals who (1) currently are employed by an air carrier registered with the CAB under part 298 and hold FAA operating certificates under Part 135; (2) hold an FAA Commercial Pilot certificate with an instrument and multi-engine rating; OR an ATP with a multi-engine rating; and (3) have a current Part 135 pilot-in-command flight check.

Certified Flight Instructor (18 Credit Hours):

Individuals who possess an FAA Flight Instructor Certificate with Instrument rating and, in addition, have a minimum of 500 hours experience as flight instructor.

Aviation Safety Technology (64 Credit Hours):

Military aviator/pilots who have additionally completed an approved Aviation Safety Officer Program (36 months OJT).

Flight Technology (48 Credit Hours):

Rated military aviator/pilots (36 months OJT).

Aircraft Maintenance Technology (32 Credit Hours):

Individuals who have attained supervisory level of skill qualification in an approved aircraft maintenance specialty.

Aviation Weather Technology (32 Credit Hours):

Individuals who have attained supervisory level in an approved aviation weather specialty.

Electronic Operations/Maintenance Technology (32 Credit Hours):

Individuals who have attained supervisory level in an approved aviation electronics specialty.

Flight Operations Administration Technology (32 Credit Hours):

Individuals who have attained supervisory level in an approved flight operations administration specialty.

Flight Simulation Operations Technology (32 Credit Hours):

Individuals who have attained supervisory level in an approved flight simulation specialty.

Aviation Maintenance Technology (Military Aviation Maintenance Personnel) (48 Credit Hours):

Individuals who possess an FAA Airframe and Powerplant Certificate/License and have a minimum of three years work experience in military aviation maintenance.

Aviation Maintenance Technology (Civilian Aviation Maintenance Personnel) (48 Credit Hours):

Individuals who possess an FAA Airframe and Powerplant Certificate/License and have a minimum of three years work experience in aviation maintenance subsequent to obtaining FAA certification, and which experience is on aircraft operated by a major airline in accordance with FAR Part 121 or aircraft which are turbine powered, pressurized and operated by a corporation.

**Department of Defense Civilian Aircraft Maintenance Personnel
(18 and 32 credit hours):**

Individuals who have attained journeyman level at a Naval Air Rebuild Facility (NARF) through an approved apprentice training program.

Navigation Systems Technology:

Individuals with 48 months experience (including required schooling) in one of the following specializations will receive credit as indicated:

- Navigator (32 Credit Hours)
- Electronic Warfare Officer (48 Credit Hours)
- Radar Bombardier (48 Credit Hours)

Aircraft Dispatcher (48 Credit Hours):

Individuals who have obtained an FAA Aircraft Dispatcher Certificate, are employed and have been employed as an Aircraft-Flight Dispatcher for three years.

Individuals who have attained specialist/technician qualification in an approved speciality toward the Aircraft Maintenance, Electronics Operations/Maintenance, Aviation Weather, Flight Operations Administration and Flight Simulation Operations Areas of Concentration will be granted 18 credit hours of Aeronautical Technology credit toward the Bachelor of Professional Aeronautics degree.

ASSOCIATE IN PROFESSIONAL AERONAUTICS

DEGREE REQUIREMENTS

The Associate in Professional Aeronautics degree may be completed by the attainment of specialist/technician qualification and the equivalent of three trimesters of academic study. A minimum of 65 credit hours is required for the degree, including 18 hours on the basis of a minimum of 18 months on-the-job experience and professional qualification in an approved Area of Concentration.

Students in the Aircraft Maintenance Technology Area of Concentration may elect to use the course credit of the Aviation Maintenance Technology program (20 credit hours) in place of general electives (AMT 200, 270, 280) and upper level specified electives (AMT 370, 380). When this option is selected, the allowable credit hours for each of the above categories is 12 and eight, respectively, and the AS 303 course is dropped as a requirement. The total associate degree requirements will then become 71 credit hours. This program option recognizes the student's military training (18 credit hours in AMT) and work experience in aviation maintenance. It permits substitutions which reflect the needs of the aircraft mechanic at the associate degree level while providing a viable entrance into the bachelor's degree in Professional Aeronautics.

PROGRAM DESCRIPTION

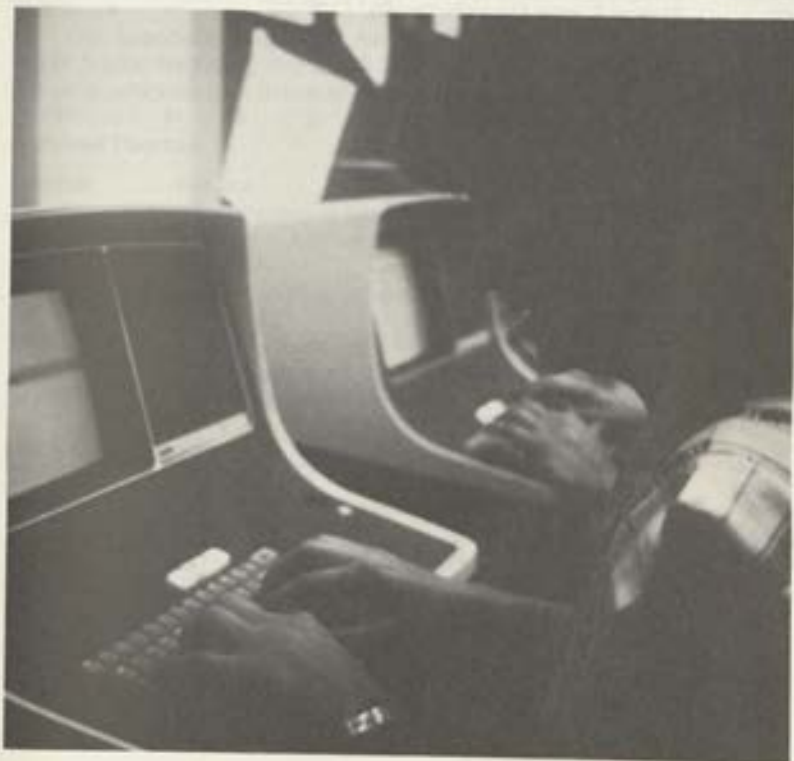
The curriculum requires study in humanities, social sciences, mathematics, physical sciences, aeronautical sciences, computer technology, economics, and management.

Areas of Concentration in the Associate in Professional Aeronautics degree program are the same as those approved for the Bachelor of Professional Aeronautics degree.

CURRICULUM REQUIREMENTS

The curriculum depends upon the amount of advanced standing granted by the University for the Area of Concentration in which the student enrolls. All experience and training related to the chosen Area of Concentration shall be included in the total amount of credit given for that Area of Concentration, as listed below under Aeronautical Technology credit. Any experience and training in another Area of Concentration may be evaluated on a course by course basis toward open electives. The Flight Engineer's rating is considered related to both Flight Technology and Maintenance Technology. In the Flight Technology area, one cannot receive credit for those courses for which he would have been given credit in other degree programs on a course by course evaluation.

The following list identifies specific curricular requirements for professional Areas of Concentration which grant 18, 32, 48 and 64 Aeronautical Technology credits toward the baccalaureate and 18 Aeronautical Technology credits toward the associate degree.



Number	Subject	Associate	Credits				
			Bachelor's Degree				
	Aeronautical Technology (Lower Level)	18	18	22	33	44	
	Aeronautical Technology (Upper Level)			10	15	20	
AS 101	History of Aviation	3	3	3	3	3	
AS 303	Government and Aviation	3	3	3	3	3	
AS 405	Aviation Law		3	3	3	3	
AS 409	Aviation Safety		3	3			
CT 205/209	Introduction to Computers in Aviation or Introduction to Computers	3	3	3	3	3	
EC 110	Macroeconomics		3	3	3	3	
EC 210	Microeconomics	3	3	3	3	3	
HU	Communication Skills	6	9	9	6	6	
	English Composition and Rhetoric, Composition and Literature, Speech, and Creative Writing courses. At least one course must be in English Composition.						
HU 221	Technical Report Writing	3	3	3	3	3	
HU/SS	Sociology, Psychology, History, Philosophy, Political Science, Music, Art, and Literature courses. A maximum of six credit hours may be in any one of these disciplines.	3	9	9	6	6	
HU/SS	Upper Division Elective		6	3	3		
MA 111	College Math for Aviation I	3	3	3	3	3	
MA 112/211	College Math for Aviation II or Statistics with Aviation Applications		3	3	3	3	
MS 110	Accounting I		3	3	3	3	
MS 200	Principles of Management	3	3	3	3	3	
MS 305	Management Analysis and Concepts	3	3	3	3	3	
PS	Physical Science, Chemistry, Physics, Earth Science, Astronomy, Geology, Biology, Zoology, and Physiology courses.	3	6	6	6	6	
Specified Electives (To Be Chosen From:)		2	27	19	15	11	
AS 307	Flight Physiology						
AS 309	Basic Aerodynamics						
AS 310	Aircraft Performance						
AS 401	Airport Development and Operation						
AS 409	Aviation Safety						
AS 410	Air Carrier Operations						
AS 412	Corporate/Industrial Aviation						
MS 322	Aviation Insurance						
MS 331	Transportation Principles						
MS 405	General Aviation Marketing						
MS 408	Airport Management						
MS 410	Management of Air Cargo						
MS 415	Airline Management						
MS 425	Trends and Current Problems in Air Transportation						
SF 303	Introduction to Aircraft Structures						
SF 308	Subsonic Aerodynamics						
SF 330	Aircraft Accident Investigation						
General Electives (Any Discipline)		9	15	12	9		
TOTAL CREDITS		65	129	129	129	129	

Associate Degree in General Aeronautics Program

INTRODUCTION

The Associate in General Aeronautics degree program is designed for people who have military training which is recommended for credit by the American Council on Education, as listed in the "ACE Guide." The program provides a mix of general, liberal arts and aviation-related courses to augment the serviceman's military educational experience. Degree completion provides the student with an educational base for a baccalaureate in aviation, as well as entry level knowledge of administrative functions in related industries.

ADMISSION REQUIREMENTS

Admission to the General Aeronautics degree program is limited to veterans and current members of the military services. A high school diploma, or equivalent, is required for all applicants. In addition, admission is limited to individuals trained in specific skill areas recommended for award of credit by the American Council on Education.

DEGREE REQUIREMENTS

The Associate in General Aeronautics degree program requires 65 credit hours, including the credit hours granted on the basis of professional qualification. Courses to be taken are:

Required Courses:

Number	Subject	Credits
AS 100	Foundations of Aeronautics	4
AS 101	History of Aviation	3
AS	Electives	6
CT 205	Introduction to Computers in Aviation	3
EC	Elective	3
HU 120	Communications I	3
HU 121	Communications II	3
HU 221	Technical Report Writing	3
HU	Elective	3
MS 200	Principles of Management	3
MS 305	Management Analysis and Concepts	3
MA 111	College Math for Aviation I	3
PS	Elective	3
SS 210	Introduction to Sociology OR	
SS 220	Introduction to Psychology	3
SS	Elective	3
	General Electives/Military Training	16
TOTAL		65

Associate in Science in Aviation Safety Program

The Aviation Safety degree program is a continuing education program designed to meet the educational needs of highly skilled professionals employed or desiring employment in the field of aviation safety.

This program is designed to prepare the student for entry into the safety career field in the aviation industry, military services, or municipal, state and federal governments.

ADMISSION REQUIREMENTS

Admission to the Aviation Safety degree program is limited to military aviators possessing FAA Commercial Pilot certification. A high school diploma, or equivalent, is required for all applicants.

TRANSFER CREDITS

Students who have completed previous college work may request an evaluation of their college transcripts through the Dean of Admissions and Records.

PROGRAM DESCRIPTION

The curriculum requires study in the liberal arts, mathematics, aeronautical sciences, physical sciences, management and aviation safety, to include formal training in aircraft accident investigation.

DEGREE REQUIREMENTS

The Associate in Science in Aviation Safety may be completed in the equivalent of four trimesters of academic study. A minimum of 66 credit hours is required.

Required Courses:

Number	Subject	Credits
AS 100	Foundations of Aeronautics	4
AS 101	History of Aviation	3
AS 102	Navigation I	3
AS 103	Flight Rules and Regulations	3
AS 201	Meteorology	3
AS 303	Government and Aviation	3
HU 120	Communications I	3
HU 121	Communications II	3
HU 220	Communications III	3
HU 221	Technical Report Writing	3
MA 111	College Math for Aviation I	3
MA 112	College Math for Aviation II	3
MS 305	Management Analysis and Concepts	3
PS 101	Basic Chemistry	3
PS 102	Explorations in Physics	3
SF 105	Safety Management	2

SF 308	Subsonic Aerodynamics	3
SF 219	Aviation Psychology	2
SF 250	Safety Program Development	3
SF 303	Introduction to Aircraft Structures	2
SF 307	Aviation Physiology	2
SF 330	Aircraft Accident Investigation	3
	General Electives (any discipline)	3

TOTAL CREDITS

66

Master of Business Administration in Aviation Program

The Master of Business Administration in Aviation (M.B.A./A.) is a professional degree primarily for individuals seeking to become managers in the aviation industry and for those presently serving in management positions in the industry.

The program is not designed to provide specialists in such areas as accounting, finance, marketing, operations research, personnel, etc., but to develop a well-rounded manager who can coordinate the activities of such specialists toward the goals and objectives of the organization.

While the program provides the traditional foundation courses in management, it also emphasizes practical applications of management theory to the aviation industry. Diversity of skills and employment capability are key aims of the program. The program permits obtaining a degree in a field related to one's occupation and also presents managerial principles applicable to all industries, thereby providing a significant flexibility for the individual.

DEGREE REQUIREMENTS

Thirty-six semester hours of graduate study are required. Eighteen credit hours are required core courses, with the remaining 18 hours as electives. Required core courses emphasize the tools and techniques of management; electives emphasize the application of these techniques to more specific aviation problems.

CORE COURSES

MS 610	Advanced Organization Theory
MS 611	Quantitative Methods in Business
MS 612	Management Information Systems
MS 613	Personnel Management and Industrial Relations
MS 614	Marketing Management
MS 618	Corporate Finance

ELECTIVE COURSES (Select 18 credit hours)

MS 500	Government Role in Aviation
MS 570	International Developments in Aviation
MS 600	Transportation Principles
MS 605	Airline Operations and Management
MS 615	Current Problems in Aviation
MS 625	Airline Marketing Management
MS 632	Aviation Labor Relations
MS 635	Business Policy
MS 638	Managerial Economics
MS 645	Airport Management
MS 655	Aviation Law and Insurance
MS 695	Special Project
AS 530	Corporate Aviation Operations
AS 606	Aerospace Control/Communication Systems
AS 608	Aircraft Accident Investigation and Aviation Safety
AS 609	Aircraft Maintenance Management
AS 634	Aviation Psychology
AS 636	Advanced Aviation Planning Concepts
AS 640	Supply and Distribution in the Aviation Industry
AS 641	Production and Procurement in the Aviation Industry
AS 642	Research and Development for the Aviation Industry

NOTE: Not all elective courses are offered at each graduate program location.

All courses are non-sequential and are assigned a credit value of three semester hours. New students may enroll and start the program with any course if all undergraduate prerequisites have been satisfied.

Elective courses enable the student to select aviation related courses suited to his individual interests, aspirations and occupational needs.

Master of Aviation Management Program

The Master of Aviation Management (MAM) program is for individuals pursuing careers in or related to aviation. The program broadens a student's perspectives in the management field, thereby enhancing professional growth and ability to contribute effectively in any assignment.

The program's objective is to produce well-rounded managers who will be effective in any managerial environment. This is accomplished by the study of diverse skills which will foster assignment flexibility. The ability to coordinate the activities of specialists in finance accounting, marketing, operations research and personnel toward an organization's objective is emphasized.

The MAM curriculum consists of traditional management courses, and it emphasizes practical applications of management theory to aviation. Elective courses enable students to select courses suited to their individual interests, backgrounds, aspirations and occupational needs.

This program enables the student to obtain a graduate degree directly related to his occupation, as well as gain an indepth understanding of managerial principles applicable to all industries. The individual who possesses this degree has a broad, diverse foundation in management and is prepared to operate and/or manage in various assignments.

DEGREE REQUIREMENTS

Thirty-six semester hours of graduate study are required. Eighteen credit hours are required core courses, with the remaining 18 hours as electives. Core courses emphasize the tools and techniques of management; electives emphasize more specific aspects of management and the application of management techniques to aviation problems.

CORE COURSES

MS 610	Advanced Organization Theory
MS 611	Quantitative Methods in Business
MS 612	Management Information Systems
MS 613	Personnel Management and Industrial Relations
MS 615	Current Problems in Aviation
MS 620	Managerial Psychology

ELECTIVE COURSES (Select 18 credit hours)

MS 500	Government Role in Aviation
MS 570	International Developments in Aviation
MS 595	Small Business Management
MS 600	Transportation Principles
MS 614	Marketing Management
MS 618	Corporate Finance
MS 635	Business Policy
MS 638	Managerial Economics
MS 645	Airport Management
MS 650	Advanced Managerial Accounting
MS 655	Aviation Law and Insurance
MS 665	Public Administration
MS 696	Special Project
AS 606	Aerospace Control/Communication Systems
AS 608	Aircraft Accident Investigation and Aviation Safety
AS 609	Aircraft Maintenance Management
AS 634	Aviation Psychology
AS 636	Advanced Aviation Planning Concepts
AS 640	Supply and Distribution in the Aviation Industry
AS 641	Production and Procurement in the Aviation Industry
AS 642	Research and Development for the Aviation Industry

NOTE: Not all elective courses are available at all graduate program locations.

All courses are non-sequential and are assigned a credit value of three semester hours. New students may enroll and start the program with any course if undergraduate prerequisites have been satisfied.

Elective courses enable the student to select courses suited to his individual background, interests, aspirations and occupational needs.

Master of Aeronautical Science Program

The Master of Aeronautical Science (M.A.S.) program provides a professional degree for the student who desires to pursue a career in technically oriented aviation activities. The program is a specially planned and integrated curriculum designed to meet the educational requirements of those students who would direct and supervise technical activities including operations, maintenance, logistics, safety, systems and meteorological functions.

This program stresses the development of both technical and managerial skills needed by current and future directors, supervisors and potential leaders. It is also concerned with the ability of these individuals to deal with problems of choice and complexity involved in the successful adaptation of functions and organizations to new requirements in an ever-changing environment.

The program provides the student with an opportunity to achieve individual fulfillment and contribute significantly to the aviation industry, which represents an extremely important national asset. Program emphasis is placed on the interaction of different facets of the aviation industry and their interrelationship with other sectors of the national economy. The student is encouraged to gain a deeper appreciation of the contributions aviation has made, is making and may be expected to make to the technological, economic, and political advancement of society.

DEGREE REQUIREMENTS

Thirty-six semester hours of graduate study are required. Eighteen credit hours are required core courses, with the remaining 18 hours as electives. Of the six elective courses, at least two must be selected from aeronautical science courses. Required core courses emphasize technical knowledge of aviation safety, communications, psychology, maintenance and aircraft systems as well as current problems in aviation. The electives permit a concentration or cross-sectional selection of courses concerned with various aspects of aviation operations, logistics or management.

CORE COURSES

AS 606	Aerospace Control/Communication Systems
AS 607	Advanced Aircraft Systems
AS 608	Aircraft Accident Investigation and Aviation Safety
AS 609	Aircraft Maintenance Management
AS 634	Aviation Psychology
MS 615	Current Problems in Aviation

ELECTIVE COURSES (Select 18 credit hours)

AS 505	Systems of Corporate/Business Jet Aircraft
AS 509	Advanced Aerodynamics
AS 510	Advanced Aircraft Performance
AS 511	Electronic Navigation and Control Systems
AS 512	Air Carrier Operations
AS 515	Simulation in Aviation
AS 518	Systems and Regulations for Operation of the Boeing 727
AS 519	Cockpit Procedures for Operation of the Boeing 727
FA 520	Simulator Training and Flight Check on Boeing 727 Systems and Procedures
AS 530	Corporate Aviation Operations
AS 549	Pilot Requirements for Operation of the Boeing 727
FA 550	Pilot Flight Training in the Boeing 727
FA 551	Pilot Flight Training in a Corporate/Business Jet Aircraft
AS 601	Advanced Meteorology
AS 636	Advanced Aviation Planning Concepts
AS 640	Supply and Distribution in the Aviation Industry
AS 641	Production and Procurement in the Aviation Industry
AS 642	Research and Development for the Aviation Industry
AS 695	Special Project
MS 500	Government Role in Aviation
MS 570	International Developments in Aviation
MS 600	Transportation Principles
MS 605	Airline Operations and Management
MS 610	Advanced Organization Theory
MS 612	Management Information Systems
MS 613	Personnel Management and Industrial Relations
MS 625	Airline Marketing Management
MS 632	Aviation Labor Relations
MS 645	Airport Management
MS 655	Aviation Law and Insurance

All courses except those specified in the course descriptions are nonsequential. All courses are assigned a credit value of three semester hours with the following exceptions: AS 505, two credit hours; AS 519, two credit hours; FA 520, one credit hour; and FA 551, one credit hour. New students may enroll and start the program with any course except those awarded less than three credit hours; however, undergraduate prerequisites must be satisfied before the student may enroll in a graduate course for which prerequisites have been established.

Elective courses enable students to select courses suited to individual interests, aspirations and occupational needs.

NOTE: Not all elective courses are offered at each graduate program location.

SPECIAL FLIGHT AND RELATED COURSES

Embry-Riddle offers the following Special Flight and Ground School Courses at 0 academic credit for the student who desires an accelerated training program meeting FAA Certificate requirements, but who is not enrolled as a full-time student in the Master of Aeronautical Science degree program. For further information on these courses, contact the Associate Dean of Graduate Studies, or Senior Flight Instructor for jet training.

FT 505	Cessna Citation II/Jet Commander (1121) Ground School
FT 551	Cessna Citation II/Jet Commander (1121) Type Rating
FT 518	Flight Engineer, FAA Written Preparation
FT 519	Advanced Flight Engineer I
FT 520	Advanced Flight Engineer II
FT 549	Airline Transport Pilot, FAA Written Preparation
FT 550	Boeing 727 Simulator and Type Rating



Embry-Riddle **Chapter V** **Aeronautical University**

Course Descriptions



COURSE DESCRIPTIONS

Courses numbered 001-099 are non-credit courses. Courses numbered 1XX, 2XX, 3XX and 4XX are generally taken in the freshman, sophomore, junior, and senior years, respectively. Because of the career orientation of Embry-Riddle's degree programs, this condition will not always apply. The student is cautioned to plan ahead so as to meet necessary prerequisites in a timely manner.

Courses numbered 300 and above are upper division courses and reflect the advanced level in the technical skill and/or designated discipline. Courses numbered 500 and above are graduate level courses.

The course offerings of the University are described below in alphabetical order by course designations.

Corequisites and prerequisites may be waived by permission of the responsible Division Chairman or Resident Center Director.

Not all courses are taught at all locations.

AERONAUTICAL ENGINEERING

AE 101—Introduction to Aeronautical Engineering **2 Credits**

An overview of aerospace engineering. History; basic physical laws; aerodynamics and flight; stability and control; high speed flight; structures; reciprocating engines; reaction engines. To be taken during first year.

AE 301—Aerodynamics I **3 Credits**

The atmosphere. Dimensional analysis and similitude. Bernoulli equation. Measurement of airspeed. Circulation theory of lift. Laminar and turbulent boundary layers. Characteristics of low-speed airfoils. High-lift devices. Incompressible potential flow. Glauert thin airfoil theory. Lanchester-Prandtl lifting line theory. Prerequisite: MA 243, ES 304.

AE 302—Aerodynamics II **3 Credits**

Laminar and turbulent flows, transition point, determination of skin friction drag on an airfoil. Obtaining equations for streamline, for particle path, and for streakline in a flow field. Compressible flow, shock waves, thermodynamics of gas flow. Reversible and irreversible processes. Changes in pressure, density, and temperature across shock waves. Isentropic duct flow and flow through a nozzle. Static performance and maneuvers in flight. Propeller theory. Prerequisite: AE-301.

AE 304—Aircraft Structures I **3 Credits**

Space structures. Introduction to fuselage stress analysis and wing structural analysis. Inertia forces and load factors for an airplane. Various flying and landing conditions. Mohr's circle for moment of inertia and combined stresses. Shear flow and bending stresses. Prerequisite: ES 302.

AE 310—Wind Tunnel Laboratory I **2 Credits**

This laboratory consists of a series of aerodynamic experiments using the wind tunnel. Simple and multiple manometers, and the strain gauge force balance. Experiments concerning closed duct flow include diffuser efficiency tests, venturi performance, and pitot-static speed calibration. Pressure measuring experiments consist of boundary layer velocity profiles; airfoil pressure coefficients, and momentum drag. Tests using the force balance include plain and flapped wing performance and complete airplane model tests. Corequisite: AE 301.

AE 401—Advanced Aerodynamics I **3 Credits**

Kinematics and dynamics of a fluid field; stream function in two-dimensional incompressible flow; Euler's equation; the momentum theorem of fluid mechanics; vortex flow; flow about a body. Thin airfoil and finite wing theory. Prerequisite: AE 302, MA 441.

AE 402—Advanced Aerodynamics II**3 Credits**

Wave phenomena. Normal shock, oblique shock, Prandtl-Meyer expansion waves and reflection waves. Dynamics of viscous fluids; the boundary layer. Principle of similarity; wings in compressible flow. The Von Karman integration relations, Prandtl-Glauert transformation and Navier-Stokes equation. Prerequisite: AE 401.

AE 404—Aircraft Structures II**3 Credits**

Shear flow and bending stresses. Analysis of semimonocoque structure members. Beams with unsymmetrical cross-sections. Tapered beams. Cutouts in wing and fuselage members. Deflections of aircraft structures. Shearing deformations. Wing warping and twisting. Prerequisite: AE 304.

AE 405—Aircraft Structures III**3 Credits**

Stress and strain transformations. Equilibrium and compatibility equations. Mechanical behavior of materials. Theory of elasticity. Stress functions. Finite-difference methods. Application to eigenvalue problems. Introduction to the use of matrix methods and the solution of matrix eigenvalue equations. Introduction to work and energy principles. Bending and extension of beams. Prerequisite: AE 404.

AE 406—Jet and Rocket Propulsion**3 Credits**

A study of ramjets, pulsejets, turbojets and turboprops. Thrust efficiency, fuel consumption, nozzle flow and Rayleigh and Fanno line conditions. Subsonic and supersonic diffusers, mass flow, energy transfer, centrifugal and axial compressors, engine and aircraft flight performance, solid and liquid propellant rocket motors. Prerequisite: ES 305, AE 301.

AE 410—Wind Tunnel Laboratory II**2 Credits**

This course is a technical elective and consists of a series of advanced experiments using the wind tunnel. Model design and construction, testing procedure, control surface testing, propeller testing, use of wind tunnel data, scale effects, complete model testing. Includes introduction to supersonic testing. Prerequisite: AE 310.

AE 413—Airplane Stability and Control**3 Credits**

Development of longitudinal, lateral and directional stability and control, control surface design, control effectiveness and size requirements. Dynamic control theory. Handling characteristics of aircraft. Prerequisite: AE 302.

AE 420—Aircraft Preliminary Design**3 Credits**

Airplane conceptual design principles are developed to meet modern aerodynamic, propulsion, structural and performance specifications. A complete light airplane is designed, resulting in a design package consisting of specifications, aerodynamic calculations, inboard profile drawing, weight and balance, general arrangement drawing, aerodynamic drag analysis and complete performance report. Prerequisite: AE 413, ET 110.

AE 421—Aircraft Detail Design**3 Credits**

Principles of aircraft detail and component part design, manufacture and production are covered along with projects to give actual experience in the design of aircraft components. Carries the design of an airplane from the general layout to the design of its detail parts and the design of necessary tools. Prerequisites: AE 420, AE404.

AE 433—Aerodynamics of the Helicopter**3 Credits**

The development of rotating-wing aircraft and the helicopter. Hovering theory and vertical flight performance analysis. Auto-rotation, physical concepts of blade motion and control, aerodynamics and performance of forward flight. Blade stall, stability and vibration problems. Design problems. Prerequisite: AE 302, MA 441.

AE 299, 399, 499—Special Topics in Aeronautical Engineering**1-5 Credits**

Lectures, laboratories or seminars on selected topics in aeronautical engineering. Prerequisite: Consent of instructor and the division chairman. May be repeated with a change of content. (Lab fee required if computer used.)

AERONAUTICAL SCIENCE

AS 100—Foundations of Aeronautics

4 Credits

After completion of this course, the student will possess the knowledge necessary to pursue further study in Aeronautical Science and will be competent to conduct flight activities as a licensed Private Pilot. The student will be able to explain Flight Theory, compute various basic aircraft performance factors, identify physiological aspects of flight, relate FAA regulations to specific problems, interpret aviation meteorology reports, determine flight conditions to be expected in various situations, and solve navigational problems using basic pilotage, dead reckoning, and basic radio navigational procedures.

AS 101—History of Aviation

3 Credits

A survey of aviation from its beginning to the present age. Major emphasis is on both the aviation industry in the United States and the government's regulation of it. Lesser emphasis is on technological and military developments. Upon successful completion the student can identify significant acts and developments that brought United States aviation to its present state; and in light of the past, evaluate better such acts and developments in the future.

AS 102—Navigation I

3 Credits

After completion of this course, the student will possess a basic working knowledge of pilotage and dead reckoning, navigation techniques and procedures. He will be able to explain the basis for the construction of maps. He will use charts and the Airman's Information Manual. He will solve problems using the navigation computer and understand its theory of operation through the development of wind triangles. He will apply this knowledge to practical navigation problems. He will be able to explain the types, uses and operating principle of radio navigation aids and equipment. He will be introduced to the theory and operation of electronic navigation equipment and celestial navigation. Prerequisite: AS 100.

AS 103—Flight Rules and Regulations

3 Credits

This course is an analytical study of selected governmental rules, regulations, publications and procedures established by the FAA. Knowledge of these are needed by pilots and managers in related aviation fields to insure safe and orderly operation of air traffic both in VFR and IFR conditions within the National Airspace System structure. The broad range of regulations covered are the issuance of pilot and instructor certificates and ratings and the regulatory conditions under which these certificates and ratings are necessary; the "rules of the road" governing the operation of aircraft within the United States; definitions and abbreviations; medical standards and certification; the rules covering aircraft accident regulatory reporting procedures; the certification and operation of air carriers and commercial operators of large aircraft; and air taxi and commercial operations of small aircraft. Upon successful completion of the above, the student will recognize the conditions under which such rules and regulatory procedures apply. Prerequisite: AS 100.

AS 105—Introduction to Aeronautics

1 Credit

A course for students who have not attained the pilot skills required for solo flight prior to registration. Material covered includes cockpit procedures training, audio-visual presentations, and observer flights for familiarization purposes. (Lab Fee Required)

AS 201—Meteorology I

3 Credits

The study of atmospheric processes and their relation to weather conditions encountered in the fields of aeronautics. Course includes cloud identification, solution of basic stability problems, study of air masses and the jet stream. Special emphasis is made on the aeronautical codes and weather maps. Practical application is accomplished by individual study in the University Weather Facility (Lab fee required).

AS 202—Navigation II**3 Credits**

A study of the fundamental concepts, techniques, and procedures involved in the science of instrument flight. After completion, a student should be able to apply aerodynamic factors; explain efficient attitude instrument flying techniques; explain operating principles and limitations of the flight instruments; utilize appropriate navigational and safety equipment, facilities, and flight control devices; describe the federal airway system; interpret all charts used in instrument flight; and apply and explain air traffic control procedures, regulations, and publications designed to insure the safe and orderly operation of all flight. Prerequisite: AS 102.

AS 203—Aircraft Engines—Reciprocating**3 Credits**

A study of reciprocating engine fundamentals and theory. This course includes comprehensive study of components, construction, mechanical relationships, power calculations, carburetion, induction, ignition, fuel-air requirements, and regulations pertaining to engine operation. After completion, the student should be able to discuss reciprocating engine theory, components and systems; calculate mathematically engine power requirements and component timing sequences; recognize the advantages and disadvantages of reciprocating engine configuration and construction characteristics; understand operating limitations; and interpret performance charts and graphs.

AS 210—Aircraft Systems and Components**3 Credits**

A study of aircraft systems and the regulations governing certification of the various components. The course includes a comprehensive study of electrical, environmental, hydraulic, fuel and lubrication systems and the theory and calculations relating to each. After completion, the student should be able to discuss theory and components of each system; calculate mathematically electrical circuits, hydraulic, fuel and lube requirements; recognize the advantages, disadvantages and limitations of each system; and interpret charts, graphs and schematic diagrams of the various systems.

AS 211—Aircraft Engines and Systems**3 Credits**

An introduction to reciprocating and gas turbine aircraft engines, coupled with a survey of aircraft systems and components typically found on reciprocating and jet engine aircraft. Theory of both types of engines and their principles of operation, to include power and thrust measurement and operating procedures, are examined. Systems operations, including fuel, oil, hydraulic, electrical and pneumatic systems, are related to the type power plant with which they are normally associated. Differences between reciprocating engines with their associated systems are stressed. Not available to students in Aeronautical Science or the Flight Technology Area of Concentration of Aeronautical Studies.

AS 303—Government and Aviation**3 Credits**

The chronological development of governmental control and regulation is examined. This survey, together with a detailed study of representative Acts and Conventions, provides the basis for recognizing the origin and status of organizations currently exercising control and regulation, estimating effects of aviation legislation on national and international endeavors, appreciating the need for new or changed control with changing conditions, anticipating the effects of legislative or rule proposals on priority requirements of national defense, the public interest, and rights of the individual.

AS 307—Flight Physiology**2 Credits**

A study of aeromedical information significant to pilots. Upon successful completion, the student can explain the causes, symptoms, prevention, and emergency treatment of ailments common to the flight environment. He can describe man's normal functioning and the variations necessary for the onset of hypoxia, hyperventilation, decompression sickness, vision problems, spatial disorientation, and body heat imbalance. This is accomplished through the determination of the unique factors found at high altitudes.

AS 309—Basic Aerodynamics**3 Credits**

A study of basic principles and relationships including subsonic aerodynamic principles and their application to basic flight techniques and procedures. After completion, a student should be able to apply basic principles of physics to aerodynamic problems; state basic aerodynamic results and their limitations; explain relationships in both two dimensional and three dimensional subsonic flow situations; describe operating differences between low and high performance aircraft; and analyze attitude flying principles, configuration change procedures, and take-off, approach, landing and multiengine procedures. Prerequisite: MA 112 and PS 104 or equivalent.

AS 310—Aircraft Performance**3 Credits**

This course of study will provide the student with an understanding of the performance characteristics of modern reciprocating, turbo-prop, and jet aircraft. He will acquire a working knowledge of aircraft weight and balance procedures, takeoff and cruise control, and aircraft performance curves. He will apply his knowledge by computing operating data from aircraft charts and performance curves in order to obtain the highest degree of aircraft flight efficiencies. Prerequisites: AS 309 and PS 104 or PS 201 or equivalent.

AS 311—Aircraft Engines, Turbine**3 Credits**

This is a study of gas turbine fundamentals including thrust, factors affecting thrust, gas generator, Mach number, specific fuel consumption, engine station designations, diffusers and diffusion, and types of gas turbine engines. Further, the student examines turbine engine components, including turboprop engine fan sections, compressors, fuel systems and fuel controls, turboprop fuel controls and propeller governors, as well as gas turbine engine operation and engine operational characteristics.

AS 401—Airport Development and Operations**3 Credits**

An in-depth study of the managerial problems associated with the development and operation of the small to medium size airport and associated fixed base operations. Representative areas of study include airport and operator expansions as dealt with in terms of federal, state and local obligations; necessity for good community relations for future development; guidelines for establishing leases; and internal guidelines for good fixed base operation management. A study of the potential business and employment opportunities as represented by the average general aviation airport and fixed base operator. Prerequisite: AS 303.

AS 404—Principles of Instruction I**3 Credits**

During this course, the student will develop a flight training syllabus, construct a number of lesson plans, demonstrate different teaching methods and techniques of instruction which will include the use of instructional aids and various motivational tools. The student will apply the fundamentals of teaching and learning to flight instruction, analysis of flight maneuvers, and evaluation of performance. After completing the course, the student will be competent to conduct instructional activities as a flight instructor—airplane. Prerequisite: FA 305 or Commercial Pilot Certificate.

AS 405—Aviation Law**3 Credits**

A study of the chronological development of air law, including federal and state regulatory functions, rights and liabilities of aviators and operators, rights of third parties on the ground, case history study, liens and security interest in aircraft, international conferences, bilateral and multilateral agreements and treaties and national and international criminal statutes pertaining to aviation. Prerequisite: AS 303.

AS 406—Principles of Instruction II**3 Credits**

A continuing examination of educational theories and techniques, including the application of basic principles of Educational Psychology to instructional situations, developing effective methods for teaching instrument flying procedures, and maximizing competence in IFR operations. After completion, a student should be able to explain cognitive and motivational theories; construct a usable model of the mind; predict changes in behavior according to behavior modification theories; apply psychological models to educational problems; explain instrument training regulations and requirements; teach operation of flight instruments and aircraft systems; attitude flying technique, flight planning procedures and chart use, utilization of navigation and safety equipment and application of regulations and procedures; and demonstrate a high level of competence in all IFR related areas. After completion of the course, the student should be competent to conduct instruction as an Instrument Flight Instructor. Prerequisites: A Commercial Pilot Certificate with an Instrument Rating and AS 404 or a Flight Instructor Certificate with an Airplane Rating (single or multi-engine).

AS 408—Flight Safety**3 Credits**

A study designed to identify and explain the potential influence on pilot performance of such factors as attitude, motivation, and perception. The course involves oral and written work in formulating and analyzing both ideal and practical personal and organizational safety goals and procedures. Detailed examination of actual accident cases provides the opportunity to analyze examples of real life failure in personal and organizational safety standards. Prerequisites: AS 307, AS 309 and Commercial Pilot qualification or equivalent.

AS 409—Aviation Safety**3 Credits**

An examination of aviation safety designed to help the non-flying student identify major problem areas, evaluate safety programs, and recognize the value and total impact of aviation accident prevention efforts. Major emphasis is given to recognition of the impact of an accident upon the industry. Underlying human factors which contribute to the aviation accident are identified, and safety prevention responsibilities are evaluated. Basic principles of investigation are examined, and a survey of accident cases is made to improve recognition of causes of actual failures. Not available to students in Aeronautical Science or the Flight Technology Area of Concentration of Aeronautical Studies.

AS 410—Air Carrier Operations**3 Credits**

This course treats air carrier operations from a practical standpoint as viewed by both the ground-based flight dispatcher and the cockpit flight crew. Parts of the Federal Aviation Regulations, Part 121, as they pertain to ground and in-flight operations, are studied. Airline weight and cargo manifest forms are filled out. Typical airline flight planning forms and in-flight charts and graphs are used in analyzing air carrier flights from takeoff to landing. The course will include a review of weight and balance and aircraft performance considerations as they relate to air carrier operations. Prerequisites: AS 103, AS 201, AS 202, and AS 310.

AS 412—Corporate/Business Aviation**3 Credits**

The course provides insight into the operation of a corporate flight department. The student will appreciate the value of management mobility made possible through the corporate flight department. He will become acquainted with operational and administrative factors peculiar to corporate aviation; how aviation relates to industry; the typical flight department organization; aircraft and equipment evaluation; operations and maintenance; administrative and fiscal considerations.

AS 299, 399, 499—Special Topics in Aeronautical Science**1-3 Credits**

Lectures, seminars, laboratories, independent studies, or combinations of these on selected topics in general aviation. Prerequisites: Consent of instructor and approval of Division Chairman. May be repeated with a change of subject.

AS 606—Aerospace Control Communication Systems**3 Credits**

A detailed analysis of current and future developments and trends in the control of air traffic. Upon completion of the course, the student should be able to understand

current capabilities and future requirements of ground-based and airborne equipment for the control of aircraft. Problems of air traffic control and communications in an overcrowded environment will be examined, including solutions based on ground and airborne computers, satellite communications and telemetry, and the application of new systems of navigation. Prerequisites: Understanding Federal Aviation Regulations and concepts of instrument navigation—AS 103 and AS 202, or equivalent or Commercial or Military Instrument Pilot Rating.

AS 607—Advanced Aircraft Systems

3 Credits

An examination of current state-of-the-art aircraft systems and a projection of current research trends to future air vehicle requirements and applications. Upon successful completion of the course, the student should be able to understand the capabilities and limitations of current aircraft propulsion, electrical, environmental, control and hydraulic systems and sub-systems, and predict their future development to meet tomorrow's requirements. Emphasis is placed on the total aircraft design and the interdependence of the aircraft system design constraints. The content of the course is both qualitative and quantitative. Prerequisite: Understanding concepts of aircraft systems—AS 210 or equivalent.

AS 608—Aircraft Accident Investigation and Aviation Safety.

3 Credits

A critical analysis of selected aircraft accidents, including an in-depth evaluation of causal factors. Emphasis is placed on the human factors of the flight crew and support activities, which may contribute to accidents in transport category and general aviation operations. The student will identify some of the problems confronting aviation safety and develop possible solutions to these problems. The students will research and analyze factors that prevent aircraft accidents. Also, they will develop a flying safety program that can be used as an effective tool of management in reducing aircraft accidents. Prerequisite: None.

AS 609—Aircraft Maintenance Management

3 Credits

A detailed analysis of maintenance regulations, structure, capabilities and limitations of maintenance organizations, maintenance functions accomplished at depot and airport levels, and maintenance inspection and reporting requirements. The student will analyze preventive and corrective maintenance practices, maintenance scheduling, processing of reparable items, and maintenance inspections conducted by commercial airlines and fixed base operators. Included are case studies on maintenance actions of typical and unique situations. A major objective is to understand the interface of maintenance functions with supply operations and training activities. The students will also review the interaction between the maintenance and flight operations functions in the day-to-day operations of commercial airlines. Management functions and responsibilities directly related to the aircraft maintenance effort are analyzed. Prerequisite: None.

AS 634—Aviation Psychology

3 Credits

An examination of relevant psychological theories and their relationship to the human factor in the structures and processes of aeronautical environments. Perception, learning, and intelligence applied to aircraft operations. Emotional and psychophysiological elements in conditions of stress. Psychomotor skills and perceptual errors in relation to self-inducement and external inducement; amelioration through human engineering. Prerequisite: Commercial or military instrument pilot rating.

AIR FORCE AEROSPACE STUDIES

AF 101—U.S. Military Forces General Military Course

1 Credit

Examines the role of the Air Force in the contemporary world by studying the total force structure, strategic offensive, defensive, general purpose, and aerospace support forces. The Leadership Laboratory exposes student to the function and organization of a military unit.

AF 102—U.S. Military Forces General Military Course

1 Credit

Continuation of AF 101.

AF 201—The Development of Air Power General Military Course 1 Credit
Includes the development of flight from balloons through the current employment of U.S. air power including peaceful employment such as relief missions and civic action programs through the 70s. The Leadership Laboratory provides leadership experience in officer type activities.

AF 202—The Development of Air Power General Military Course 1 Credit
Continuation of AF 201.

AF 301—Air Force Leadership and Management Professional Officers 3 Credits

A study of Air Force leadership at the junior officer level, including theoretical and professional aspects. Course also includes a study of military management, functions, principles and techniques applicable to the operation of military units. The Leadership Laboratory provides advanced leadership experiences in officer-type activities.

AF 302—Air Force Leadership and Management Professional Officers 3 Credits

Continuation of AF 301.

AF 401—National Security Forces in Contemporary American Society Professional Officers Course 3 Credits

An examination of military, professional and existing patterns of civil-military relations to include analysis of the international and domestic environment affecting U.S. defense policy. Within this structure, a survey is conducted of the post World War II development of defense strategy, formulation and implementation of national security policy. Also includes an examination of military law and its implications for the junior officer. The Leadership Laboratory provides advanced leadership experiences in officer type activities.

AF 402—National Security Forces in Contemporary American Society Professional Officers Course 3 Credits

Continuation of AF 401. The Leadership Laboratory prepares the student to deal with his entry into active duty with the USAF.

AVIATION MAINTENANCE TECHNOLOGY

AMT 101—Physical Mathematics 2 Credits

The fundamentals of mathematics and physical science appropriate to and combined with mechanical drawing necessary for the training of the aviation maintenance technician.

AMT 102—Aviation Regulations, Records, and Documents 2 Credits

A presentation of Federal Aviation Regulations pertinent to aircraft maintenance and the associated documents, publications, records, and weight and balance computations.

AMT 103—Basic Electricity 3 Credits

A study of basic electrical theory and its application to aircraft systems, to include inspection and repair of aircraft circuits, and electrical components (Lab fee required).

AMT 104—Aircraft Servicing Procedures 2 Credits

A familiarization course in aircraft servicing. Standard procedures of ground operation, movement, and the safety precautions necessary to aircraft line operations (Lab fee required).

AMT 105—Aviation Material 3 Credits

An introduction to the tools, hardware and materials used in aircraft maintenance and repair. This course includes the processes of inspection and testing used in aviation (Lab fee required).

AMT 121—Aircraft Structures and Sheet Metal Fabrication **4 Credits**

A study of aircraft structural characteristics and methods of fabrication, with an emphasis on aluminum sheet metal applications. Explains metal-working processes and develops the techniques necessary for airworthy manufacture. Prerequisite: AMT 105. (Lab fee required).

AMT 122—Aircraft Wood, Fabric, and Finishes **2 Credits**

A course of study encompassing the use of wood and various fabrics in structural design of aircraft, and the methods of working and finishing these materials. Includes the application of paint, dope and resins (Lab fee required).

AMT 124—Aircraft Instruments and Communication/Navigation Systems **2 Credits**

This course familiarizes the student with the aircraft instruments and their functions; also communications and navigation equipment, including removal and installation procedures (Lab fee required).

AMT 151—Aircraft Powerplant Systems **3 Credits**

A basic study of the theory of operation of reciprocating engines, and determination of efficiency. The effectiveness of lubrication systems and lubrication component repair methods (Lab fee required).

AMT 152—Aircraft Powerplant Systems **3 Credits**

A study of the operation of powerplant component systems; fuel metering and distribution, superchargers, heat exchangers, and exhaust manifolds. Inspection and repair processes are applied to operating engine systems (Lab Fee required).

AMT 154—Propellers **2 Credits**

A comprehensive study of propeller design. Principles of operation, means of control and propeller-engine relationship, methods of installation, removal and adjustment are practiced (Lab fee required).

AMT 200—General Aeronautics and Applications **4 Credits**

An introduction to general aeronautics. Includes a study of physical mathematics, weight and balance, FAA regulations, AN hardware, aircraft servicing, and basic electricity. (Type 65.)

AMT 201—Aircraft Maintenance for Pilots **3 Credits**

A course designed to broaden the knowledge of the professional pilot and give him an intimate knowledge of the Airframe and Powerplant of aircraft. Subject areas will include the 25 items of preventive maintenance that a pilot is authorized to perform by FAR Part 43.3(f).

AMT 223—Aircraft Welding, Assembly and Rigging **4 Credits**

The theory and practice of welding methods used in aircraft construction is thoroughly covered with emphasis on gas welding and advanced work in heli-arc welding. Airframe assembling operation is explained and demonstrated as well as control and rigging adjustments. (Lab fee required.)

AMT 252—Engine Installation and Operation **2 Credits**

A course of study which details the correct methods of installation, inspection, and run-up check of powerplants. Includes fuel, oil, and electrical adjustments on operational aircraft engines. Prerequisites: AMT 152 and 253. (Lab fee required).

AMT 253—Engine Electrical and Ignition Systems **3 Credits**

This course consists of the study of various electrical systems used in support of the reciprocating engine, to include methods of generating, timing and distributing ignition energy. Included in the course are the testing and overhaul procedures for engine electrical components, to include the latest advanced magneto systems. Prerequisite AMT 103. (Lab fee required).

AMT 254—Propeller Systems **1 Credit**

A study of reversing and turboprop propellers, propeller auxiliary systems, and their installation, operation and maintenance. Corequisite AMT 154.

AMT 255—Turbine Engines, Theory, Design and Maintenance **2 Credits**

Theory of operation of the turbine engine is studied and analyzed along with the function of the components required for engine operations. Study of the advanced turbine powerplants used by the jumbo jets is included in this course.

- AMT 270—Airframe Structures and Applications** 4 Credits
A study of aircraft wood, dope, fabric, sheet metal, and welding theory and methods of fabrication. (Type 65.)
- AMT 280—Powerplant Theory and Applications** 4 Credits
An in depth study of the reciprocating engine to include theory, ignition, fuel metering, lubrication, exhaust, engine installation and overhaul. (Type 65.)
- AMT 321—Aircraft Electrical Systems** 4 Credits
The types and characteristics of aircraft electrical circuits and components are compared and evaluated. Advanced electrical systems as used in corporate and airline aircraft are studied. The course includes troubleshooting and repairs of AC and DC electrical systems and equipment. Prerequisite: AMT 103. (Lab fee required.)
- AMT 322—Hydraulic and Pneumatic Systems** 2 Credits
The operation and maintenance of aircraft hydraulic and pneumatic systems are analyzed together with the study of these systems as they are used in corporate and airline type aircraft. The methods of repair and replacement of components are examined as well as ground test and servicing equipment (Lab fee required).
- AMT 323—Aircraft Environmental and Fuel Systems** 3 Credits
A study of the various types of systems used for cabin atmospheric control in advanced aircraft systems including those found on corporate and airline type aircraft. Heating, cooling, pressurization as well as oxygen supply are included in the study. Additional study is directed towards the various fuel storage and distribution systems used in small as well as large aircraft (Lab fee required). Prerequisite: AMT 104.
- AMT 324—Aircraft Landing Gear Systems** 3 Credits
A study of aircraft landing gear structures and operating systems to include the maintenance and repair procedures for retraction systems, shock strut, brakes, wheels, tires and ground steering equipment. Included in the course are the advanced landing gear systems used in narrow and wide body jet airliners (Lab fee required). Prerequisite: AMT 104.
- AMT 325—Helicopter Maintenance** 4 Credits
A course designed to prepare the A&P mechanic to perform all tasks necessary to maintain helicopters. Includes principles of operation, power train, control system, and other maintenance functions peculiar to helicopters. Prerequisites: A&P license or program chairman's permission (Lab fee required).
- AMT 327—Aircraft Electrical Systems Science and Applications** 4 Credits
Basic electricity. Ohm's Law and mathematics, aircraft electrical wire and schematics, electromagnetism, batteries, generators, motors, voltage regulators, aircraft electrical systems, communication and navigation electrical systems, and electrical instruments. This course is offered at USAF European Resident Centers only.
- AMT 351—Reciprocating Engine Overhaul** 4 Credits
This course contains a detailed study supported by the actual overhaul of operational reciprocating engines. Included is a study of the procedures and acceptable techniques used in engine disassembly, inspection, repair and reassembly. Advanced techniques of non-destructive testing are included in this course (Lab fee required). Prerequisite: AMT 151.
- AMT 353—Turbine Engine Systems, Engine Overhaul & Operation** 4 Credits
An advanced course in turbine engine overhaul procedures that involves the complete disassembly, inspection, repair, reassembly and operational test of turbojet and turboshaft engines. Precision and extremely close tolerance measurements are made while following detailed and closely supervised written instructions (Lab fee required). Corequisite: AMT 255.
- AMT 355—Aircraft Maintenance Practicum** 8 Credits
Enrolled students who have at least 18 months airframe and/or powerplant formal training, directed study, and practical maintenance experience which meet FAA established prerequisites for taking the FAA airframe or powerplant examination may receive credit for this course.

- AMT 356—Aircraft Turbine Engine Science and Application** **4 Credits**
Turbine engine theory and performance, instrument systems, lubrication systems, fuel metering systems, induction systems, inspection procedures. This course is offered at USAF European Resident Centers only.
- AMT 357—Aircraft Accessory and Propeller Science and Application** **4 Credits**
Propeller theory, installation, repair and troubleshooting, aircraft engine accessory overhaul and repair. This course is offered at USAF European Resident Centers.
- AMT 370—Airframe Systems and Applications** **4 Credits**
A study of airframe electrical, hydraulic, pneumatic, environmental, fuel, landing gear, and auxiliary systems. (Type 65.)
- AMT 380—Aircraft Propulsion Systems and Applications** **4 Credits**
A comprehensive study of theory, principles of operation, controls and systems for propellers and turbine engines. (Type 65.)
- AMT 455—Advanced Aircraft Maintenance Practicum** **8 Credits**
Enrolled students who meet all requirements of AMT 355 and who have at least 30 months experience in an aviation maintenance technical specialty, may receive credit for this course.

AVIATION TECHNOLOGY

- AT 115—Private Pilot Ground School** **2 Credits**
A comprehensive study of those aeronautical subjects necessary for the beginning flight student. Upon completion of AT 115, the student will be qualified to pass the FAA Private Pilot written examination. The student will demonstrate through oral and written tests and records that he meets the prerequisites specified in the Federal Aviation Regulations and will be able to explain and use when appropriate principles of radio communications; air traffic control; radio navigation; elements of the airplane; aircraft systems; weight and balance; aerodynamics; piloting procedures; maneuver techniques; Federal Aviation Regulations; Federal Advisory Circular system; navigation computer; VFR navigation and radio aids to include pilotage and dead reckoning; weather; airport operations and collision avoidance; Airman's Information Manual; and safe and efficient operation of an aircraft, as all these subjects pertain to the kind of flight operations authorized by his Private Pilot Certificate. Corequisite: FA 102-103.
- AT 216—Instrument Ground School** **3 Credits**
A comprehensive study of those aeronautical subjects which are necessary for the instrument pilot. Upon completion of AT 216, the student will be qualified to pass the FAA Instrument Pilot written examination. The student will be able to demonstrate through oral and written tests and records that he meets the prerequisites specified in the Federal Aviation Regulations and will be able to explain and use, when appropriate, gyro and differential pressure instruments including their construction and operating characteristics and use under actual instrument conditions; the Federal Aviation Regulations; IFN charts such as Instrument Approach charts, Enroute charts and the associated inflight procedures; instrument flight emergency procedures; aviation weather to include charts, forecasts and icing; ATC procedures; and safe and efficient operation of airplanes, as all these subjects pertain to the kind of flight operations authorized by his Instrument Pilot Certificate. Prerequisites: AT 115 or FAA Commercial Pilot Certificate. Corequisite: FA 203-204.
- AT 217—Instrument Commercial Ground School** **3 Credits**
A comprehensive study of those aeronautical subjects necessary for the instrument pilot and beginning commercial pilot. Upon completion of AT 217, the student will be qualified to pass the FAA Instrument Pilot written examination. The student will demonstrate through oral and written tests that he meets the prerequisites specified in the Federal Aviation Regulations and will be able to explain and use gyro and differential pressure instruments, including their construction and operating characteristics and use under actual instrument conditions; the Federal Aviation Regulations; IFN charts such as Instrument Approach charts, Enroute charts,

and the associated inflight procedures; emergency procedures; aviation weather to include charts, forecasts, and icing; ATC procedures; as all these subjects pertain to operations authorized by the FAA Instrument Pilot Certificate. The student will also initiate a study of those aeronautical subjects necessary for the commercial pilot. He will be able to explain and use Federal Aviation Regulations; aircraft performance; weight and balance; aerodynamics, as these subjects pertain to flight operations authorized by the FAA commercial pilot certificate. The remaining commercial subjects will be completed in AT 317. Prerequisite for AT 217: FAA Private Pilot Certificate. Corequisite: FA 203.

AT 317—Commercial Ground School

2 Credits

A comprehensive study of those aeronautical subjects which are necessary for the commercial pilot. Upon completion of AT 317, the student will demonstrate through oral and written tests and records that he meets the prerequisites specified in the Federal Aviation Regulations and will be able to explain and use, when appropriate, Federal Aviation Regulations; safe and efficient operations of airplanes and the IFR charts; ATC procedures; weather charts and forecasts; navigation computer; radio navigational aids; aircraft performance; weight and balance; and aerodynamics as all these subjects pertain to the kind of flight operations authorized by his commercial pilot certificate. It should be noted that AT 317 excludes the instrument portion of the commercial certificate. Such instrument portion is available when AT 217, previously described, is taken. Prerequisite for AT 317: AT 216 or FAA Private Pilot Certificate. Corequisite: FA 305.

AT 400—Fundamentals of Flight Instruction and Flight Instructor—Airplane

2 Credits

A comprehensive study of those subjects necessary to understand the fundamentals of teaching and learning. AT 400 also includes the necessary aeronautical knowledge to meet the FAA prerequisites for the Certified Flight Instructor, and the student will be able to pass both the Fundamentals of Instruction and the Certified Flight Instructor—Airplane FAA written examination. Upon completion the student will demonstrate through oral and written tests and records that he meets the prerequisites specified in the Federal Aviation Regulations and will be able to explain and use, when appropriate, the fundamentals of teaching and learning; effective teaching methods; instructional management; aerodynamics; aeromedical information for instructors; integrated method of flight instruction; instructor responsibilities; flight training syllabus; Federal Aviation Regulations; flight training maneuvers and procedures and analysis; weather; airplane engine, and flight instrument operation; and the safe and efficient operation of airplanes, as all these subjects pertain to the kind of flight and instructional use authorized by his Certified Flight Instructor—Airplane Certificate. Prerequisite: Commercial Pilot Certificate. Corequisite: FA 400.

AT 408—Fundamentals of Instrument Flight Instruction

2 Credits

A comprehensive study of those aeronautical subjects which are necessary for the instrument flight instructor. Upon completion of AT 408, the student will be qualified to pass the FAA Instrument Flight Instructor examination. The student will be able to demonstrate through oral and written tests and records that he meets the prerequisites specified in the Federal Aviation Regulations and will be able to explain and use, when appropriate, fundamentals of teaching and learning; effective teaching methods; instructional management; aerodynamics; aeromedical facts for the instructor; integrated method of flight training maneuvers and procedures; physiological and aerodynamic factors; flight instruments; radio navigation and communications; departures, enroute and arrival navigation; operational procedures for instrument flight; and the safe and efficient operation of airplanes as all these subjects pertain to the kind of flight and instruction use authorized by his Certified Flight Instructor—Instrument Certificate. Prerequisite: AT 400 or Fundamentals of Instruction FAA Certificate, or Flight Instructor—Airplane certificate. Corequisite: FA 407.

AVIONICS TECHNOLOGY

AV 301—Avionics for Aviators

3 Credits

A survey course designed to present to the student the theory of operation, evaluation, purchase, installation and utilization of various types of avionic equipment. Subject areas include radiowave propagation, NAV/COMM, ILS, ADF, DME, transponder, weather radar, and area navigation systems.

AV 311—Aircraft Communication and Navigation Systems (formerly AV 315)

3 Credits

An advanced study of electronic communication and navigation equipment used in general and commercial type aircraft. Subject areas include VHF communication, VOR, ADF, glideslope receivers, marker beacon receivers and audio systems. Prerequisite: EL 211.

AV 321—Aircraft Pulse Systems (Formerly AV 316)

3 Credits

An advanced study of electronic pulse type equipment used in general and commercial type aircraft. Subject areas include transponder systems and circuits and distance measuring equipment systems and circuits. Prerequisites: EL 211 and EL 321.

AV 322—Aircraft Radar and Autopilot Systems (Formerly AV 317)

3 Credits

An advanced study of weather radar, autopilot and Area Navigation Systems used on general and commercial type aircraft. Subject areas include a review of radar principles, weather radar systems and circuits, autopilot systems and circuits, and Area Navigation systems and circuits. Prerequisites: EL 311 and EL 321.

AV 340—Avionics Equipment Troubleshooting and Repair Laboratory

2 Credits

A laboratory type course designed to apply both electronic and avionic theory to actual hands-on troubleshooting, alignment and repair of avionics equipment (Lab fee required). Prerequisites or Corequisites: AV 311, 321, 322.

AV 341—Advanced Avionics Equipment Troubleshooting and Repair Laboratory

2 Credits

A continuation of AV 340. In addition to receiving more experience in avionics troubleshooting and repair, the student will be exposed to avionics installation techniques and test equipment calibration and maintenance (Lab fee required). Prerequisite: AV 340.

COMPUTER TECHNOLOGY

CT 101—Introduction to Keyboard Operations

1 Credit

Fundamental skills and techniques in the operation of the keyboard and use of computers in word processing. Emphasis is placed on achieving both speed and accuracy in typing, and on familiarization with fundamentals of word processing. Lab fee required.

CT 205—Introduction to Computers in Aviation

3 Credits

Diverse exposure to the digital computer and its uses and capabilities as a management tool. Topics include basic introduction to systems analysis and management information systems. Contrasts hardware capabilities, programming requirements, and systems analysis and planning.

CT 209—Introduction to Computers

3 Credits

Concepts of algorithms, computers, and programming. Hands-on computer programming in BASIC. Student develops an appreciation of what kinds of tasks can (or cannot) be performed by computer, and the type of analysis and programming necessary to achieve desired results (Lab fee required). (Not to be taken by Engineering or Engineering Technology students.)

CT 210—Computer Programming for Engineers

3 Credits

An introduction to the use of computers, specifically for engineering students. Problems covered are typical engineering computations. Required for AE and AET majors (Lab fee required). Prerequisite: MA 241.

- CT 220—Fundamentals of Digital Computer Electronics** **3 Credits**
 Operation and uses of the digital computer. Topics will include number systems, Boolean algebra and Veitch diagrams. Concepts of logic circuits and knowledge networks, programming, coding, and basic components and principles of operation of the digital computer.
- CT 309—FORTRAN Programming** **3 Credits**
 Student learns, and is required to use, the FORTRAN-IV language in the solution of problems. Problem areas will include both scientific and commercial applications, with emphasis on the language use. Topics will include arrays functions, subroutines, modular programming, debugging techniques, analysis, programming, and documentation (Lab fee required). Prerequisite: CT 209.
- CT 310—COBOL Programming** **3 Credits**
 A first course in use of the COBOL language for solving commercial data processing problems. Student implements programs in an on-line environment. Emphasis on systems analysis, types of file manipulation, and modular programming (Lab fee required). Prerequisite: CT 209.
- CT 312—Assembly Language Programming** **3 Credits**
 Symbolic coding techniques at the machine language level. Computer architecture, number systems, addressing techniques, and interrupt processing. Student develops an understanding of actual operation of a computer code through hands-on testing (Lab fee required). Prerequisite: CT 209 or CT 210.
- CT 316—Structured Programming** **3 Credits**
 Concepts of structured programming, file structure; advanced features of SPL or PASCAL. (Lab fee required).
- CT 318—Advanced Basic Programming** **3 Credits**
 Emphasis on file processing techniques, array manipulations, and string manipulation. Student will apply structured programming techniques using the extended BASIC language (Lab fee required). Prerequisite: CT 209.
- CT 320—Advanced COBOL Programming** **3 Credits**
 Emphasis on multi-program systems applications, with both macro and micro-flow-charting. Array manipulation; applications in the various file processing techniques. Sorting. (Lab fee required). Prerequisite: CT 310.
- CT 340—Computer Processing of Statistical Data** **3 Credits**
 Least square analysis, curve fitting, analysis of variance and covariance in computations. Estimating and trend projections using computer-produced plots (Lab fee required). Prerequisite: CT 209.
- CT 350—Modeling Using Computers** **3 Credits**
 Applications of linear programming. Queueing and Monte Carlo simulations (Lab fee required). Prerequisites: MA 211, CT 209.
- CT 360—Advanced FORTRAN Applications** **3 Credits**
 Techniques in data reduction, modular programming at the systems level; array manipulation. Practical applications in applied programming (Lab fee required). Prerequisite: CT 309.

CT 410—Computing Data Structures**3 Credits**

Basic concepts of data: linear lists, strings, arrays, orthogonal lists, Ordering or sorting techniques. Recursion, string and list processing languages. (Lab fee required). Prerequisites: CT 312.

CT 420—Operating Systems**3 Credits**

Development, structure, and functions of operating systems. Demand service models. Development of a real-time operating system (Lab fee required). Prerequisite: CT 410.

CT 430—Numerical Analysis**3 Credits**

Numerical solution of algebraic/transcendental equations; system of equations, differential equations, integral equations; interpolation; finite differences; error analysis. (Lab fee required). Prerequisites: CT 210, MA 340.

CT 435—Computer Graphics I**3 Credits**

Introduction to graphical data processing. Display parameters. Information retrieval versus document retrieval. Image recording parameters. Transmission of digitized information. Pattern description and recognition. Picture models and data structures. Display software. (Lab fee required). Prerequisite: CT 309.

CT 440—Data Base Management Systems**3 Credits**

Current technology in massive file processing with on-line systems. BOMS versus traditional file processing techniques. Advantages and disadvantages. Applications on E-RAU computer (Lab fee required). Prerequisites: CT 410 or consent of instructor.

CT 450—Real-Time Systems**3 Credits**

Interfacing real-time devices with computers. Computer-to-computer communications. Timing interrupt processing and queueing. Applications in aviation. Hands-on implementation of an application. (Lab fee required). Prerequisite: CT 420.

CT 460—Telecommunications Systems**3 Credits**

Techniques and applications in telecommunications. Types of data communication versus line discipline methodology. Hardware requirements and constraints. Speed versus quality. Security and encoding algorithms. Prerequisite: CT 420 or consent of instructor.

CT 470—Airborne Computing Systems**3 Credits**

Selected current airborne computing systems will be studied in depth. Data rates, acquisition and display techniques and data bank capacities will be analyzed in the perspective of operational requirements. Course work will be supplemented by discussions with industry and inspection of flight hardware, where possible (Lab fee required). (Prerequisite: CT 420)

CT 471—Air Traffic Control Computing Systems**3 Credits**

Selected computational techniques and problems in Air Traffic Control will be studied in depth. Data rates, acquisition and display techniques, fail-safe systems technology, and man-machine interface problems will be explored. Course work will be supplemented with discussions with industry personnel and hands-on experience where practical (Lab fee required). Prerequisites: CT 350, CT 420.

CT 472—Introduction to Microprocessor Applications**3 Credits**

Introduction to microprocessor systems and programming. Research projects in special applications of microprocessors. Prerequisite: CT 312.

CT 299, 399, 499—Special Topics in Computing**1-6 Credits**

Lectures, laboratories or seminars on selected topics in computing. Prerequisite: Consent of instructor and division chairman.

COOPERATIVE EDUCATION

CE—297, 298

3 to 6 Credits

Aeronautical Engineering (AE), Aviation Management (AM), Avionics (AV), Computer Technology (CT), Flight (FL), Maintenance Technology (MT). Practical learning experience in full-time employment that is related to the student's degree program and career goals. Course title and level is determined by the faculty co-op advisor, based on the work assignment. Prerequisite: Approval by Faculty Cooperative Education Advisor and Director of Cooperative Education.

CE—397, 398

3 to 6 Credits

Continuation of CE—297, 298.

CE—497, 498

3 to 6 Credits

Continuation of CE—397, 398.

ECONOMICS

EC 110—Macroeconomics

3 Credits

An introduction to economic principles, problems, and policies, with emphasis on macroeconomic theory, business fluctuation, fiscal and monetary policy, and economic growth.

EC 210—Microeconomics

3 Credits

An introduction to economic principles, problems, and policies, with emphasis on microeconomic theory and current domestic economic problems.

EC 310—Labor Economics

3 Credits

A survey of the economics of the labor market to include wage determination and employment theory. Labor organization, labor legislation and current developments in labor relations. Prerequisite: EC 210.

EC 320—Economics of Industrial Organization

3 Credits

Market structures in American Capitalism. Structure and behavior of firms in particular industries. Government regulation of industry. Anti-trust laws, transportation, and public utilities. Prerequisites: EC 110 and EC 210.

EC 340—Managerial Economics

3 Credits

Use of the tools of economic analysis to develop insights into and to help solve problems in the operation and management of modern business enterprise. Imperfect markets, optimal combinations of products and pricing, forecasting demand, and capital budgeting are presented from the point of view of the decision-maker. Prerequisites: EC 110, EC 210, MS 305.

EC 420—Economics of Air Transportation.

3 Credits

A study of the economic aspects of airline service, with consideration given to the impact of federal aid and regulation, types of aircraft, airport problems, consumer interests, and competitive practices. Prerequisites: MS 110, MS 200 or MS 205, EC 110, EC 210 and AS 303.

EC 299, 399, 499—Special Topics in Economics

1-4 Credits

Lectures, seminars, laboratories, independent studies, or combinations of selected topics in economics. Prerequisites: Consent of the instructor and approval of the Division Chairman. May be repeated with a change of content.

ELECTRONICS TECHNOLOGY

EL 101—Basic Electronic Concepts and D-C Circuits

4 Credits

A detailed study of basic electronic theory and D-C circuit concepts. Subject areas include the physical nature of matter, electrical terms, units and components, sources of D-C, resistance, inductance and capacitance, Ohm's Law, and D-C circuit analysis (Lab fee required).

EL 102—Fundamentals of A-C and A-C Circuit Analysis

4 Credits

A detailed study of A-C theory and A-C circuit characteristics. Subject areas include vectors and phase relationships, inductive and capacitive reactance, impedance, series and parallel resonant circuits, transformer theory and A-C circuit analysis (Lab fee required). Prerequisite or Corequisite: MA 111 or its equivalent (or) EL 101.

EL 103—Semiconductor Fundamentals

4 Credits

A detailed study of semiconductors and their use as active devices. Subject areas include semiconductor doping, the PN junction diode, bipolar junction transistor operation and characteristic curves, Field effect transistor operation and characteristic curves, load line analysis, active device parameters, active device equivalent circuits, amplifier coupling techniques, and amplifier frequency response. In addition to the semiconductor theory presented, the students will also be exposed to vacuum tube operation and their use in amplifier circuits (Lab fee required). Prerequisites: EL 101 and 102.

EL 104—Basic Electronic Circuits and Systems

4 Credits

A detailed study of basic electronic circuits and their function in electronic systems. Subject areas include power supplies, amplifiers, electro-acoustic transducers, oscillators, radio transmitters, radio wave transmission, radio receivers, and integrated circuits. (Lab fee required). Prerequisites: EL 103

EL 206—Advanced Radiotelephone Equipment Theory and Operation

3 Credits

A preparatory course for the 1st Class FCC Radiotelephone License and FCC radar endorsement. Classroom presentations include a review of advanced electronic theory which is applicable to FCC 1st Class licensing, advanced radiotelephone (Element IV) and radar techniques (Element VIII). Prerequisite or Corequisite EL 105, or EL 207.

EL 207—Basic Radiotelephone Equipment Theory and Operation

3 Credits

A preparatory course for the FCC 2nd Class Radiotelephone License. Classroom presentations include a review of basic electronic theory which is applicable to FCC 2nd Class licensing, basic FCC law (Element I), basic operating practices (Element II) and basic radiotelephone (Element III). Prerequisite or Corequisite: EL 104, or EL 211.

EL 211—Basic Electronic Circuits and Systems

4 Credits

An introductory course in electronic circuits and their use in electronic communication systems. Subject areas include power supply circuits, RF amplifier circuits, oscillator circuits, operational amplifiers, antenna theory, transmission lines, radio wave propagation, frequency multipliers, amplitude modulated transmitters, frequency modulated transmitters, single sideband transmitters, AM and FM Receivers. (Lab fee required). Prerequisite: EL 103.

EL 221—Introduction to Pulse and Digital Circuits

4 Credits

An introductory course in electronic pulse and digital circuit fundamentals. Subject areas include waveform analysis, RC, RL and RLC circuit analysis and their use in pulse circuits, integrating and differentiating circuits, pulse transformers, delay lines, diode and transistor switching circuits, logic gates, families of integrated circuits (including TTL, ECL, MOS and CMOS), bistable, monostable and free running multivibrators. (Lab fee required). Prerequisites: EL 101 and 102, Corequisite: EL 103.

**EL 310—Advanced Electronic Troubleshooting
Analysis, Instruments and Techniques**

2 Credits

A survey of basic and advanced test instruments and related measuring techniques. Subject areas include the theory of measurement, nature and sources of error test instrument operating theory, calibration and use. Prerequisite or Co-requisite: EL 221. (Not offered on campus.)

EL 311—Advanced Electronic Circuits and Systems

4 Credits

A continuation of EL 111. This course presents some of the more advanced circuits and their use in electronic communication systems. Subject areas include frequency synthesizers, noise considerations, microwave hardware, microwave active devices and circuits, broadband communication techniques, pulse and data communication systems, and radar fundamentals (Lab fee required). Prerequisites: EL 211.

EL 321—Advanced Digital Circuits and Systems

4 Credits

A continuation of EL 221. Subject areas include shift registers, counting circuits, comparator circuits, memories, arithmetic logic, and an introduction to microprocessors and computer organization. (Lab fee required). Prerequisite: EL 221.

EL 299—Special Topics on Avionics

1 Credit

ENGINEERING SCIENCE

ES 201—Statics

3 Credits

A vector treatment of the concepts and characteristics of forces, moments and couples. Equivalent systems of forces. Equilibrium of particles and rigid bodies. Distributed forces, free-body diagrams and constraints. Trusses, beams, and analysis of structures. Properties of surfaces. Prerequisite: PS 201. Corequisite: MA 243

ES 302—Solid Mechanics

3 Credits

The concepts of stress and strain and their tensor properties. Elastic stress-strain relations. Analysis of stress and deformation in members subject to axial, torsional, bending and combined loading. Energy methods. Prerequisite: ES 201.

ES 303—Dynamics

3 Credits

A vector treatment of the kinematics and laws of motion of particles and rigid bodies. Acceleration, momentum, work, energy and power. Prerequisite: ES 201.

ES 304—Fluid Mechanics

3 Credits

Physical characteristics of the fluid state. Fluid statics. Kinematics of fluid motion. Flow of an incompressible ideal fluid. The impulse-momentum principles. Similarity and dimensional analysis. Fluid measurements. Prerequisite: ES 201.

ES 305—Thermodynamics

3 Credits

A study of the concepts of heat and work and their transformation, as governed by the first and second laws of thermodynamics. Properties of pure substances. Reversible processes and conventional power and refrigeration cycles. One dimensional compressible flow. Prerequisite: ES 303.

ES 307—Engineering Materials Science

3 Credits

Materials used in aeronautical engineering applications. Properties of materials and their measurement. Metals and their structures. Characteristics of metallic phases. Equilibrium diagrams. Processing of metals and alloys. Plastics, their structures and characteristics. Ceramics and their characteristics. Composite materials. Prerequisite: PS 106, PS 202 (Lab fee required).

ES 401—Mechanical Vibrations

3 Credits

Simple harmonic motion. Undamped and damped free vibration. Forced vibration. Multiple degrees of freedom. Multi-mass torsional and transverse systems. Equivalent torsional systems. Balancing. Dynamic damping. Computer and laboratory demonstrations of system dynamic performance. (Computer fee required). Prerequisites: ES 303, MA 340.

ES 403—Heat Transfer**3 Credits**

One and two-dimensional steady and unsteady-state conduction heat transfer, including an introduction to finite-difference and finite-element methods of analysis. Free and forced convection heat transfer. Radiation heat transfer. (Computer fee required). Prerequisites: ES 304, ES 305, MA 340.

ES 404—Electrical Engineering I with Laboratory**4 Credits**

Introduction to the fundamentals of electrical engineering. Circuit theory and variables. Voltage-current relationship for passive elements—resistance, capacitance, and inductance. Circuit analysis and network solutions for ac networks. Phasors and frequency-domain analysis. Time-domain analysis via differential equations, and using the Laplace transform. Equivalent circuits. Graded sequence of applicable laboratory experiments. Prerequisites: PS 202, MA 340.

ES 405—Electrical Engineering II**3 Credits**

Continuation of the principles of electrical engineering. Active and nonlinear circuit elements—diodes, vacuum tubes, transistors, integrated circuits. Graphical analysis, and analysis using small-signal equivalent circuits. Amplifiers, operational amplifiers, rectification. Computer principles—Boolean algebra and logic gates. Feedback control systems. Motors and generators. Prerequisite: ES 404.

ES 407—Advanced Solid Mechanics**3 Credits**

The basic equations of the theory of elasticity. Energy principles. Matrix methods of stress and deformation analysis of structures. Axially symmetric problems. Torsion. Plates and shells. Elastic stability. Introduction to the finite element method of stress analysis. Computer applications of finite element and structural analysis procedures. (Computer fee required). Prerequisites: ES 302, MA 340.

ES 408—Continuum Mechanics**3 Credits**

Kinematics and deformation of a continuum. Stress. Balance principles for mass, momentum and energy. Constitutive equations. Application of the theory to solid and fluid media. Prerequisites: ES 302, ES 303, ES 304, MA 441.

ES 409—Space Mechanics**3 Credits**

The mathematics and physics of the two-body problem. Orbits, satellite launch, orbit transfer, interception and rendezvous, and long range ballistic trajectories are developed. Space coordinate systems are considered along with a brief survey of celestial astronomy. Gyro-dynamics, gyroscopic instruments, precession and nutation and inertial navigation are considered. Vehicle motion is considered along with the design, performance and optimization of single and multi-stage rockets. This is a course to be taken by students who are interested in astronautics or want to broaden their background in aerospace engineering. It is based heavily on vector dynamics, differential equations and spatial geometry. Prerequisites: ES 303 and MA 441.

ES 410—Structures and Instrumentation Laboratory**2 Credits**

Principles of modern laboratory test instrumentation. Basic electrical measurements and devices such as strain gages, piezoelectric sensors and thermocouples. Measurement of fluid pressure and flow; temperature; thermal and transport properties; strain motion; vibration; force and torque. Experimental static and dynamic analysis of structures. Processing and analyzing experimental data; report writing and data presentation. (Lab fee required). Prerequisites: ES 302, ES 303, ES 404.

ES 299, 399, 499—Special Topics in Engineering Science**1-6 Credits**

Lectures, laboratories, or seminars on selected topics in engineering science. (Lab fee required if computer used). Prerequisite: Consent of Instructor and Division Chairman. May be repeated with change of content.

ENGINEERING TECHNOLOGY

ET 101—Engineering Graphics

2 Credits

Principles of lettering. Drawing instruments and their use. Linework code and drafting techniques. Geometrical construction. Multiview projection. Sectional and auxiliary revolutions. Dimensioning, shop processes and tolerances. Threads and fasteners. (Not for B.S.A.E. Degree credit.)

ET 110—Drafting and Descriptive Geometry

2 Credits

Dimensioning, tolerancing, threads, fasteners. Introduction to descriptive geometry. Airplane general arrangement and airfoil layout drawings. Prerequisite: A completed high school course in mechanical drawing with a grade of B or better or ET 101 Engineering Graphics.

ET 301—Applied Aerodynamics with Laboratory

3 Credits

Basic fluid mechanics; airflow measurement; airfoil theory; airplane performance. Wind tunnel projects include pressure and velocity measurement and measurement of aerodynamic forces on airfoil and airplane models; smoke tunnel flow visualization. Prerequisites: MA 243, ES 303. (Not for B.S.A.E. degree credit.)

ET 303—Aircraft Drafting

3 Credits

General arrangement of layout, detail and assembly drawings. Dimensioning, local and general notes, and specification of shop processes. Drafting of formed sheet metal parts; riveted, bolted, bonded and welded assemblies; control cable, push-pull rod, and torque tube assemblies. Hydraulic and electrical schematic and drafting. Prerequisites: ET 110, ES 302.

ET 306—Applied Electrical Science with Laboratory

3 Credits

Basic D-C and A-C circuit theory with applications to instrumentation. Familiarity with instrumentation techniques will be gained in the laboratory. Prerequisite: PS 202. (Not for B.S.A.E. Degree credit.)

ET 307—Manufacturing Processes

3 Credits

The nature of production processes and how they impact detail design decisions. Topics include process selection; milling; turning; numerical control processes; forging; bending and forming; heat treatment; surface finishing; finishes and coatings; plastic and composite materials. Prerequisite: ES 302.

ET 401—Machine Elements

3 Credits

Study of machine motion, velocity, acceleration and cycling. Sizing of machine elements under operational conditions. Application and design of mechanical linkages, springs, clutches, brakes, cams, sprockets, gears and gear trains; bearing and lubrication. Other selected topics. Prerequisite: ES 302.

ET 403—Aircraft Detail Design

3 Credits

Design of load bearing structures representative of those employed in aircraft, along with supporting stress analysis and production drawings. Beams, columns, pressure vessels, torsion members, trusses. Projects include use of composite materials and cost analysis. Prerequisites: AE 304, ET 303. (Not for B.S.A.E. degree credit.)

FLIGHT-ACADEMIC

The following flight courses are offered at:

Daytona Beach

102	407
103	408
203	411
204	412
305	414
306	299
307	399
340	499
400	

Prescott

102	409
103	410
203	411
204	413
311	415
313	416
340	

FA 102—Primary Flight

2 Credits

Instruction and flight training necessary for the student to accomplish his first solo flight in an airplane and to achieve a high degree of proficiency in the basic flying maneuvers. The stages the student will progress through are pre-solo, supervised solo, basic flying techniques, and solo practice. Corequisite: AS 100.

FA 103—Basic Flight

2 Credits

A continuation of FA 102 and consists of the instruction and flight training necessary for the student to complete the minimum requirements that will qualify him to take the FAA Private Pilot Certificate flight test. In addition, the student will be introduced to advanced maximum performance and precision flight maneuvers. The stages the student will progress through are pre-solo cross country, solo cross country, private pilot certificate review, advanced night operations, and introduction to advanced and precision maneuvers. Corequisite: AS 102, AS 103. Prerequisite: AS 100 and FA 102 or equivalent experience based on E-RAU evaluation (See pages 20, 21).

FA 203—Intermediate Flight

2 Credits

Instruction and flight training that lead to the skill and competence necessary to maneuver the aircraft safely and accurately in VFR conditions within the National Airspace System, during both day and night operations. The student will also receive additional introduction and practice in the advanced maximum performance and precision maneuvers. In addition, the student will receive instruction in basic attitude instrument flying and radio navigation. The stages the student will progress through are advanced cross country navigation, advanced solo cross country navigation, precision maneuvers proficiency, basic attitude instrument flying and radio navigation. Corequisite: AS 201, AS 202, 203. Prerequisite: AS 100, AS 102, AS 103, FA 102 and FA 103, plus FAA Private Pilot Certificate, or FAA Private Pilot Certificate plus equivalent experience based on E-RAU evaluation (see pages 20, 21).

FA 204—Advanced Flight I

2 Credits

This course is a continuation of FA 203 and consists of the instruction and flight training necessary to maneuver the aircraft safely and accurately in actual or simulated instrument conditions within the National Airspace System while complying with ATC procedures and instructions. The student will receive instruction in IFR procedures such as holding, departure and arrival, instrument approaches to published minimum and ATC procedures. In addition, he will continue to practice the advanced precision flight maneuvers. The stages the student will progress through are basic attitude instrument review, terminal procedures, precision and non-precision instrument approach procedures. Corequisite: AS 210. Prerequisite: AS 100, AS 102, AS 103, AS 201, AS 202, AS 203, FA 102, FA 103, FA 203, plus FAA Private Pilot Certificate.

FA 305—Advanced Flight II**2 Credits**

Instruction and flight training necessary for the student's transition to a complex aircraft. The student will gain the aeronautical skill and experience necessary to meet the requirements for the FAA Commercial Pilot Certificate with an instrument rating. The stages the student will progress through are basic transition, advanced transition, instrument transition, IFR cross country, and commercial instrument proficiency. Prerequisite: AS 100, AS 102, AS 103, AS 201, AS 203, FA 102, FA 103, FA 203, FA 204, plus FAA Private Pilot Certificate.

FA 306—Instrument Rating**2 Credits**

Instruction and flight training necessary to maneuver the aircraft safely and accurately in actual or simulated instrument conditions within the National Airspace System while complying with ATC procedures and instructions. The student will receive instruction in IFR operations and instrument approach to published minimums, ATC procedures and emergency procedures. The stages the student will progress through are basic attitude instrument flying, IFR navigation, instrument approach terminal procedures, and IFR cross country operations. This course uses a Cessna 172 instrument aircraft and prepares the student to take the FAA Instrument rating exam. The course is designed for a transfer student who has his FAA Commercial Certificate. Corequisite: AS 202 or FAA Commercial Pilot Certificate and successful completion of FAA Instrument airplane written test. Prerequisite: FAA Commercial Pilot Certificate.

FA 307—Instrument Rating**2 Credits**

Instruction and flight training necessary to maneuver the aircraft safely and accurately in actual or simulated instrument conditions within the National Airspace System while complying with ATC procedures and instructions. The student will receive instruction in IFR procedures such as instrument flight planning, holding, departure and arrival procedures, en route and cross country IFR operations, instrument approach to published minimums, ATC procedures, and emergency procedures. The stages the student will progress through are basic attitude instrument flying, IFR navigation, instrument approach/terminal procedures, and IFR cross country operations. This course uses a Mooney M20C instrument aircraft and prepares the student to take the FAA Instrument rating exam. The course is designed for a transfer student who has his FAA Commercial Certificate. Corequisite: AS 202 or FAA Commercial Pilot Certificate and successful completion of FAA Instrument airplane written test. Prerequisite: FAA Commercial Pilot Certificate.

FA 308—Instrument Rating**2 Credits**

Instruction and flight training necessary to maneuver the aircraft safely and accurately in actual simulated instrument conditions within the National Airspace System while complying with ATC procedures and instructions. The student will receive instruction in IFR procedures such as: instrument flight planning, holding departure and arrival procedures, enroute and cross country IFR operations, instrument approach to published minimums, ATC procedures and emergency procedures. The stages the student will progress through are: Basic Attitude Instrument Flying, IFR Navigation, Instrument Approach/Terminal Procedures, IFR Cross Country Operations. This course will utilize a Gulfstream AA-5B instrument aircraft and qualifies the student to take the FAA Instrument rating Certificate exam. The course is designed for a transfer student who has his FAA Commercial Certificate. Corequisite: AS 202 or proof of having passed the FAA Instrument Airplane written exam. Prerequisite: FAA Commercial Pilot Certificate.

FA 311—Advanced Flight II**2 Credits**

Instruction and flight training necessary for the student to operate a multi-engine complex aircraft. The student will gain the aeronautical skill and experience necessary to meet the requirements for the FAA Private Pilot Certificate with a Multi-engine rating. The stages the student will progress through are basic transition, systems operation, single-engine operations, flight planning and instrument transition. Prerequisites: AS 100, AS 102, AS 103, AS 201, AS 202, AS 203, AS 210, FA 102, FA 103, FA 203, FA 204, plus FAA Private Pilot Certificate or FAA Private Pilot Certificate plus equivalent experience based on an E-RAU evaluation (see Admission to the University Chapter of this Catalog).

FA 313—Advanced Flight III**1 Credit**

Instruction and flight training necessary for the student to gain commercial and instrument proficiency in multi-engine aircraft. The student will also gain the necessary aeronautical skill and experience to meet the requirements for the FAA Commercial Pilot Certificate with an Instrument rating. The stages the student will progress through are advanced transition, single-engine operations, IFR cross country, and commercial/instrument proficiency. Prerequisites: FA 311, plus FAA Multi-Engine Private Pilot Certificate or FAA Multi-Engine Private Pilot Certificate plus equivalent experience based on an E-RAU evaluation (see Admission to the University Chapter of this Catalog).

FA 340—Multi-Engine Flight**1 Credit**

Instruction and flight training to provide the aeronautical skill and knowledge to meet the requirements for the addition of a multi-engine land class rating with instrument privileges to the student's existing pilot certificate. The following areas will be covered: Multi-engine aircraft systems, loading and performance, theory and application of multi-engine and single-engine flight in all anticipated normal and emergency conditions, both VFR and IFR. Prerequisite: FAA Commercial Pilot Certificate with an Instrument rating.

FA 400—Certified Flight Instructor—ASEL**1 Credit**

Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skill and knowledge necessary to meet the requirements for a Certified Flight Instructor Certificate with an Airplane Single Engine Land rating. This course will be conducted in a complex aircraft and will cover such areas as practice in the explanation, analysis and demonstration of all prescribed flight maneuvers and the practical in-flight application of teaching methods and techniques in preparation for the FAA Flight Instructor flight tests. Prerequisites: FAA Commercial Pilot Certificate with an Airplane-Instrument rating, AS 404.

FA 407—Certified Flight Instructor—Instrument**1 Credit**

Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skill and knowledge necessary to meet the requirements for a Certified Flight Instructor Certificate with an instrument airplane rating. This course will be conducted in a Cessna 172 instrument aircraft and will cover such areas as practice in the explanations, analysis and demonstration of all prescribed instrument flight maneuvers and the practical in-flight application of teaching methods and techniques in preparation for the FAA Flight Instructor Instrument flight test. Prerequisites: AS 406, FAA Commercial Pilot Certificate with an Instrument rating plus an FAA Certified Flight Instructor Certificate—ASEL, or AS 404 and successful completion of FA 400.

FA 408—Certified Flight Instructor—Instrument**1 Credit**

Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skills and knowledge necessary to meet the requirements for a Certified Flight Instructor Certificate with an Instrument Airplane rating. This course will be conducted in a Mooney M20C instrument aircraft and will thoroughly cover such areas as practice in the explanations, analysis and demonstration of all prescribed instrument flight maneuvers, and the practical in-flight application of teaching methods and techniques in preparation for the FAA Flight Instructor Instrument flight test. Prerequisites: AS 406, FAA Commercial Pilot Certificate with an Instrument rating plus an FAA Certified Flight Instructor Certificate—ASEL or AS 404 and successful completion of FA 400.

FA 409—Certified Flight Instructor—Instrument**1 Credit**

Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skill and knowledge necessary to meet the requirements for a Certified Flight Instructor Certificate with an Instrument Airplane rating. This course will be conducted in Gulfstream AA-5B instrument aircraft and will thoroughly cover such areas as: practice in the explanations, analysis and demonstration of all prescribed instrument flight maneuvers, and the practical in-flight application of teaching methods and preparation for the FAA Instructor Instrument flight test. Corequisite: AS 406. Prerequisite: FAA Commercial Pilot Certificate with an Instrument rating plus an FAA Certified Flight Instructor Certificate—ASEL.

FA 410—Certified Flight Instructor—ASEL**1 Credit**

Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skill and knowledge necessary to meet the requirements for a Certified Flight Instructor Certificate with an Airplane Single-Engine Land Rating. This course will be conducted in Gulfstream AA-5B aircraft. Prerequisite: CFI-AMEL or FA 411.

FA 411—Certified Flight Instructor—Multi-Engine**1 Credit**

Instruction to qualify the student for the FAA Multi-Engine Instructor's Certificate. All of the prescribed subjects listed for the FA 340 Multi-Engine course will be practiced to include teaching methodology and techniques. Prerequisite: FA 340 or equivalent plus FAA Commercial Pilot Certificate with Multi-engine and Instrument ratings and FAA Certified Flight Instructor—ASEL Certificate.

FA 412—Advanced Instrument I (M20C)**1 Credit**

Instruction and flight training in the more advanced stages of instrument flying. Emphasis is placed on the preparation and efficient execution of extended IFR cross country flights that the professional pilot will encounter in today's complex navigation system. Includes five hours of pilot-in-command time. A complex aircraft is used during this course. Prerequisite: FAA Commercial Pilot Certificate with an Instrument rating.

FA 413—Advanced Instrument I—Single Engine**1 Credit**

This course consists of instruction and flight training in the more advanced stages of instrument flying. Emphasis is placed on the preparation and efficient execution of extended IFR cross country flights that the professional pilot will encounter in today's complex navigation system. Includes five hours of pilot-in-command time. Prerequisite: FAA Commercial Pilot Certificate with an Instrument Rating.

FA 414—Advanced Instruments II (C310)**1 Credit**

Instruction and flight training in the more advanced stages of multi-engine instrument flying. The student will receive additional instruction in multi-engine instrument procedures with the emphasis placed on the preparation and efficient execution of extended IFR cross country flights, in a light twin engine aircraft, which the professional pilot will encounter in today's complex navigation system. Prerequisite: FAA Commercial Pilot Certificate with Multi-engine Land and Instrument ratings.

FA 415—Certified Flight Instructor—Single/Multi-Engine**1 Credit**

Instruction, flight training and practice teaching that will allow the student to meet the requirements for a Certified Flight Instructor Certificate for Single and Multi-Engine Land aircraft. The course will be conducted in Piper Seminole aircraft for the multi-engine and complex aircraft requirements and the Gulfstream AA-5B Tiger aircraft for single-engine requirements. Includes preparation for attainment of the Commercial Pilot Certificate—Airplane Single-Engine Land. This course is intended for those students completing FA-204, FA-311, and FA-313 in Gulfstream AA-5B and Piper Seminole aircraft who have received a Commercial Pilot Certificate—Airplane Multi-Engine Land with an Instrument Rating. Corequisite: AS 311. Prerequisites: AS 307, AS 309, AS 310 and AS 404.

FA 416—Advanced Instrument II—Seminole**1 Credit**

Instruction and flight training in the more advanced stages of instrument flying as it pertains to multi-engine operations in all anticipated normal and emergency conditions. Emphasis is placed on the preparation and efficient execution of extended IFR cross country flights that the professional pilot will encounter in today's complex navigation system. Includes five hours of pilot-in-command time. Prerequisite: FAA Commercial Pilot Certificate with Multi-Engine and Instrument Ratings.

SPECIAL FLIGHT AND RELATED COURSES

FT 505—Cessna Citation II/IA Jet (Jet Commander, 1121 Series)/Ground School

0 Credit

A comprehensive study of those subjects necessary for the jet student. Upon successful completion, the student will be qualified to enter the flight portion of the course. The student will demonstrate his knowledge through oral and written tests about Federal Aviation Regulations, theory of flight, aerodynamics, aircraft performance, aircraft systems, and safety procedures. These subjects will be oriented to the specific operations conducted in the jet.

FT 518—Flight Engineer, FAA Written Preparation

0 Credit

A comprehensive study of government regulations that govern the flight engineer during his training and in the performance of his duty. Selected parts of FAR's Part 25, 63 and 121 will be analyzed in detail from the Flight Engineer's viewpoint. The course will also expose the student to the operation of complex air carrier aircraft systems and components as found on the Boeing 727 aircraft. The student will be prepared for the FAA Flight Engineer Basic written examination, with respect to regulations, and for the FAA Flight Engineer Turbojet (727) written examination. Prerequisites: Commercial Certificate with instrument rating, and an understanding of the concepts of aerodynamics, aircraft performance and turbojet engines—AS 309, AS 310 and AS 311 or equivalent.

FT 519—Advanced Flight Engineer I

0 Credit

A comprehensive study of Boeing 727 aircraft systems and components, normal/abnormal and emergency procedures and coverage of B-727 avionics and performance characteristics. Included in the course is B-727 exterior/interior/cockpit familiarization. Upon successful completion of the course, the student will be prepared for FT 520, Advanced Flight Engineer II. Prerequisites: Commercial Pilot Certificate with instrument rating, AS 518 or equivalent and FAA Flight Engineer written examinations passed and permission of Advanced Flight Training Program Counselor (Lab fee required).

FT 520—Advanced Flight Engineer II

0 Credit

Training in a Boeing 727-100/200 series aircraft simulator in preparation for the FAA Flight Engineer Turbo Jet aircraft check ride on the B-727 aircraft. During the simulator training, the student will perform the duties of a Flight Engineer during normal/abnormal and emergency conditions. He will be expected to perform a cockpit preparation and an interior/exterior aircraft preflight. Crew coordination and Flight Engineer duties and responsibilities will be stressed. The student will be expected to fill out take-off and landing data cards and compute climb/cruise performance data. Corequisite: FT 519.

FT 549—Airline Transport Pilot, FAA Written Preparation

0 Credit

Preparation for the FAA Airline Transport Pilot written examination. Upon successful completion of the course, arrangements are made for the student with sufficient flight hours to take the written examination required for the ATP Certificate. The student will receive intensive instruction in the following areas included in the FAA written exam: Federal Aviation Regulations, Airman's Information Manual, aviation weather, weight and balance, jet transport characteristics, aircraft performance, terminal instrument approach procedures and special problems involving estimated enroute flight times, required fuel, endurance, off-course procedures, wind, airspeed adjustments, cabin pressurization and Mach number. Prerequisites: Commercial Pilot Certificate with instrument rating or military equivalent.

FT 550—Boeing 727 Type Rating Course

0 Credit

A comprehensive preparation for the FAA practical test awarding a turbo jet type rating in the Boeing 727 aircraft. Training consists of B-727 simulator training and approximately three hours of actual aircraft in-flight training. Simulator and aircraft training sessions will be accompanied by preflight briefings and post-flight critiques. Prerequisites: Commercial Pilot Certificate with multi-engine and instrument ratings and 1,500 total flight hours.

FT 551—Cessna Citation II/IA Jet (Jet Commander, 1121 Series) Type Rating Course **0 Credit**

Instruction and flight training that will enable the student to obtain the aeronautical skill, knowledge, and experience required for the addition of a jet type rating to his/her existing FAA pilot certificate. The student will be instructed in such areas as jet aircraft engines and systems, aircraft loading and performance, and the theory and application of standard operating procedures in all anticipated normal and emergency conditions, both VFR and IFR. Prerequisites: An FAA Private Pilot Certificate, with both Multi-Engine and Instrument ratings. Corequisite: FT 505.

HUMANITIES

HU 104—Writing English as a Second Language **5 Credits**

This course is offered to international students who have made an adequate score on the TOEFL test for admissions but need additional practice in the written and spoken language for satisfactory classroom performance. The emphasis is on basic grammar and writing. Technical English skills are also developed as well as any necessary conversational skills. Upon completion of this course, the student should be able to function comfortably in any academic and/or technical classroom with minimal language skills difficulty. Also, the student should be familiar with the terminology and concepts relating to his intended course of study. (Credit not applicable to any degree.)

HU 105—Expressive Communication Skills **3 Credits**

Designed to improve competence in writing and speaking the English language, through the study of grammar and mechanics, sentence and paragraph construction, and vocabulary building. (Credit not applicable to any degree or for elective credit.)

HU 110—College Study Skills **1 Credit**

Designed to help students acquire the study skills needed to do college work efficiently while they also increase comprehension abilities. Emphasis is on note-taking skills, study methods, and test-taking techniques.

HU 114—Reading English as a Second Language **5 Credits**

This course is designed to aid non-native speakers of English in developing basic reading skills. The emphasis is on vocabulary enrichment and comprehension skills. Upon completion of this course, the student should be able to function effectively in the University's beginning English courses. (Credit not applicable to any degree.)

HU 115—Receptive Communications Skills **1 Credit**

Aids students in developing reading and listening skills by improving vocabulary and comprehension levels. Lab fee required. (Credit not applicable to any degree.)

HU 120—Communications I **3 Credits**

Expository writing, interpretation, analysis and research methods. Fiction and non-fiction from library and textbook sources aid the student in developing his communicative and evaluation skills. Prerequisite: HU 105 or passing grade on placement test.

HU 121—Communications II **3 Credits**

A continuation of HU 120 with emphasis on a survey of literature. Reading materials include selected novels, poems and plays. Prerequisite: HU 120.

HU 220—Communications III **3 Credits**

A continuation of Communications I and II with emphasis on speaking effectively. Modern and traditional theory and methods, study and practice of informative, persuasive, and symposium rhetorical forms are included. Prerequisite: HU 120.

HU 221—Technical Report Writing **3 Credits**

Preparation of formal and informal technical reports, abstracts, resumes, and business correspondence. Major emphasis placed on the long technical paper and the acquisition of advanced writing skills. Prerequisites: HU 120 and HU 121.

- HU 240—Art Appreciation** **2 Credits**
A survey of painting, architecture and sculpture, covering the major period of art history and basic criteria for aesthetic understanding.
- HU 245—Music Appreciation** **2 Credits**
Introduction to the history and appreciation of music that has substantially influenced our culture. Lecture and listening hours.
- HU 250—Introduction to Logic** **3 Credits**
Principles of valid thinking; the nature of inductive and deductive inferences and their applications.
- HU 300—World Literature** **3 Credits**
Major works and literary trends in world literature. Prerequisites: HU 120 and HU 121.
- HU 305—Modern Literature** **3 Credits**
The mainstreams of literature of this century. The specific content—genre and major writers to be studied—will vary from trimester to trimester. Prerequisites: HU 120 and HU 121.
- HU 310—American Literature** **3 Credits**
A survey of intellectual backgrounds, major works and literary trends in American literature. Prerequisite: HU 121.
- HU 330—Values and Ethics** **3 Credits**
Designed to help one identify and resolve ethical problems. Status and scope of ethics, the understanding and solving of moral problems are included. This study is based on the assumption that no person can live a fulfilling life who has not set up for himself some scale of values. Ethics, as a study of human values, attempts to stimulate the moral sense, discover the best values of life, and motivate a quest for these values.
- HU 340—Introduction to Philosophy** **3 Credits**
An integrated study of man and the concepts of his culture, including views about himself, society, religion, science, the nature of knowledge, and some of the major philosophical systems such as dialectical materialism, pragmatism, and existentialism.
- HU 345—Religions of Mankind** **3 Credits**
A survey of the major religions of the world, including Judaism, Christianity, Islam, Hinduism, Buddhism and Confucianism, along with a brief examination of the development of religion as a vital aspect of man's experience in history.
- HU 350—Journalism** **2 Credits**
Presents simultaneously the theory and practice of the techniques of journalism, familiarizing the student with the functions, skills and responsibilities required in writing, editing and producing news and technical publications.
- HU 299, 399, 499—Special Topics in Humanities** **1–6 Credits**
Independent study, seminars, and other specially arranged courses not regularly scheduled. Prerequisite: Consent of instructor and approval of Division chairman.

MANAGEMENT SCIENCE

- MS 110—Accounting I** **3 Credits**
An introduction to accounting: double entry, income statement, balance sheet, interpretation of accounts; partnerships and corporations. Corequisite: MS 200 or MS 205. (Lab fee required).
- MS 112—Management Accounting** **3 Credits**
Emphasizes the conceptual, measurement, and communication aspects essential for the interpretation and use of accounting information for management purposes. These aspects will be stressed by treating three areas of cost within the field of management accounting. They are 1) full cost accounting; 2) differential accounting; and 3) responsibility accounting. Prerequisite: MS 110.

- MS 200—Principles of Management** 3 Credits
An overview of business management. Stress is placed on management, its nature, environment and opportunities. Organization, marketing, and operational factors are considered.
- MS 205—American Business Enterprise** 3 Credits
The role of business in American society. Examines the issues, foundations and environment of the business enterprise system. Business financing, production, marketing, and employee relations are stressed.
- MS 207—Travel Services** 3 Credits
An introduction to travel and tourism, including all modes of transportation, with emphasis on travel agency management. Special attention will be given to travel industry marketing methods, standard and special tariffs, passenger charters, and the increasingly important convention business. Prerequisite: MS 200 or MS 205.
- MS 305—Management Analysis and Concepts** 3 Credits
Relevance and limitations of management theory in contemporary organizations. Current managerial problems and issues in a world of rapid change. Prerequisite: MS 200 or MS 205.
- MS 308—Public Administration** 3 Credits
Characteristics of organization and management in government; impact of political processes and public pressures on administrative action; role of regulatory agencies; governmental personnel and budgetary procedures; unique qualification of the public administrator. Prerequisite: MS 305.
- MS 311—Marketing** 3 Credits
Marketing theory; marketing management; sales management; market research. Public and customer relations, advertising, distribution. Prerequisite: MS 305.
- MS 312—Accounting for Management Planning and Control** 3 Credits
The objective of this course is to explain how accounting data can be interpreted and used by management in planning and controlling business activity. The student will acquire a knowledge of the usefulness and limitations of accounting and how it can help managers operate more effectively. Prerequisites: MS 112, MS 305, and MA 112 or MA 120.
- MS 313—Personnel Management** 3 Credits
An in depth study of those areas which will provide managers and personnel administrators with the expertise to develop and manage the human resources to achieve organizational goals. Areas of Concentration will include recruiting, selection, training, manpower planning, wage and salary administration. Prerequisites: SS 210 or SS 220 and MS 200 or MS 205.
- MS 315—Finance** 3 Credits
The finance function, financial analysis and control, financial planning, short term and intermediate term financing, long term financing and financial strategies. Prerequisites: MS 110 and MS 305 and MA 112 or MA 120.
- MS 316—Psychology of Management** 3 Credits
A basic course about human problems within the supervisory and management ranks. An introduction to individuals, pairs, and different-sized groups in organizations. Prerequisites: SS 210 or SS 220 and MS 200 or MS 205.
- MS 318—Business Data Processing** 3 Credits
A management approach to understanding the computer's impact on business. Characteristics, potential, and limitations of electronic data processing are included. The major emphasis is on problem solving and preparation of reports commonly used in business activities. Prerequisites: MS 110, MS 200 or MS 205 and CT 209 (Lab fee required).
- MS 319—Management Information Systems** 3 Credits
Management information acquisition and presentation. Information economics and information management, information systems analysis, and operations analysis tools, accounting systems, critical-path information systems, inventory information systems, marketing information systems. Prerequisites: MS 305, MS 318, and MA 211 or MA 222 (Lab fee required).

MS 322—Aviation Insurance**3 Credits**

An introduction to the basic principles of insurance and risk with its special application to the aviation industry. An in-depth review of the aviation insurance industry in the United States including the market and types of aviation insurers. Prerequisite: MS 200 or MS 205.

MS 331—Transportation Principles**3 Credits**

Basic principles of the several modes of transportation—air, sea, rail, motor, water, and pipeline, including problems of competition, the importance of each in the economy, and future developmental prospects. Prerequisites: EC 110, EC 210, and MS 200 or MS 205. (Course material may also be offered at the graduate level.)

MS 390—Business Law I**3 Credits**

A survey of the legal aspects of business transactions. Areas covered include contracts, agency, bailments, negotiable instruments, partnerships, corporations, consumer credit, and the government's influence on business law. Prerequisite: MS 200 or MS 205.

MS 400—Business Law II**3 Credits**

Designed to give a broader view than that contained in MS 390 of the legal aspect of today's business world. The course covers the sources of the law as well as enforcement. Particular attention is given to the law governing the legal environment of business. Prerequisite: MS 390.

MS 401—Management Planning and Control**3 Credits**

The requirements for short term and long range planning are investigated. New product planning is discussed. The importance of the control functions will be emphasized with particular attention to applications of these functions to aviation oriented activities. Prerequisites: CT 209, EC 210, MS 305, MS 313.

MS 405—General Aviation Marketing**3 Credits**

Basic marketing concepts and procedures involved in the sale of general aviation aircraft and components to private industry and government. Particular emphasis on corporate aviation and commuter airlines. Prerequisites: EC 210, MS 305, and MS 311.

MS 408—Airport Management**3 Credits**

Comprehensive examination of the major functions of airport management including master planning. Study of the socioeconomic effect of airports on the communities they serve. Prerequisites: MS 305, EC 110, and EC 210.

MS 409—Airport Construction Project Management**3 Credits**

A study of the management and organization of airport construction projects to include project cost estimation, project life and implementation problems, and coordination of governmental and local involvement. Prerequisites: MS 305, MS 408.

MS 410—Management of Air Cargo**3 Credits**

Intensive study of the practices and problems of management with respect to air cargo. Importance of air cargo service to the economy, rate and tariff problems, terminal facilities, competition, and future prospects. Prerequisites: EC 110, EC 210, MS 110, MS 305, and MS 331.

MS 412—Airport Planning and Design**3 Credits**

The principles of airport master planning and system planning will be studied. Fundamental principles of airport layout and design are covered, including geometric design, airport drainage, pavement design, passenger and cargo terminal layout, and capacity and delay effects. Prerequisites: MS 331, MA 211 or 222, CT 209.

MS 415—Airline Management**3 Credits**

An introduction to the administrative aspects of airline operation and management. Topics include the annual profit plan, uniform system of accounts and reports, demand analysis, scheduling, the theory of pricing, fleet planning, facilities planning and airline financing. Prerequisites: MS 110, MS 305 and EC 210. (Course material may also be offered at the graduate level.)

MS 420—Industrial Management**3 Credits**

An intensive study of management in all organizations—service oriented and product oriented. Scheduling, inventory control, procurement, quality control and safety are investigated. Particular attention to applications of these to aviation oriented activities. Prerequisites: EC 210, MS 305 and MS 313 (Lab fee required).

MS 421—Small Business Management**3 Credits**

An analysis of the theoretical and practical knowledge necessary to be successful in conceiving, initiating, organizing and operating a small business. Special focus will be placed on small businesses in the aviation field. Prerequisites: EC 210, MS 305 and MA 112 or MA 120 (Lab fee required).

MS 425—Trends and Current Problems in Air Transportation**3 Credits**

Analysis of selected contemporary issues, problems and trends facing management in various segments of the aviation industry including general aviation and the airlines. Students apply previously learned concepts to practical problems to develop increased understanding and demonstrate knowledge of the subject. Prerequisites: EC 110, EC 210, MS 305.

MS 430—Management Applications**3 Credits**

Case problems in determining business policy, instituting policy and appraising the results. The viewpoint is that of top and middle management. Prerequisites: MA 320, MS 112, MS 313, MS 315, MS 401 and MS 420.

MS 299, 399, 499—Special Topics in Management**1-4 Credits**

Lectures, seminars, laboratories, independent studies, or combination of selected topics in management. Prerequisites: Consent of the instructor and approval of division chairman. May be repeated with change of content.

MS 610—Advanced Organization Theory**3 Credits**

Dynamics of organizations: the organization seen as an open system interacting with a rapidly changing environment, as a structure of organized human cooperation, as an instrument of managerial strategy. The interactions of authority, delegation, reporting and feedback design are examined; current theory and research are applied to organization processes and design. Prerequisite: Understanding concepts of management—MS 200 or MS 205.

MS 611—Quantitative Methods in Business**3 Credits**

The concepts and principles of quantitative methods used in the field of management. The course is designed for students who have no previous background in quantitative methods beyond basic statistics and who plan careers as administrators, consultants, executives or managers. The course objectives are to introduce the important ideas in quantitative methods, to give the student enough understanding and confidence to appreciate the strengths and inherent limitations of the subject and to demonstrate the cohesiveness of the methodology. Prerequisites: Understanding concepts of statistics and accounting—MA 211 or MS 222 and MS 110 and 112 (Lab fee required).

MS 612—Management Information Systems**3 Credits**

The principles and concepts in the area of management information systems. The course objectives are to bridge the gap between the tools and techniques and the management practitioner, and to provide a sound understanding of how these tools and techniques can be used to create viable management information systems. Prerequisite: Understanding concepts of statistics—MA 211 or MA 222 (Lab fee required).

MS 613—Personnel Management and Industrial Relations**3 Credits**

An in depth study of those areas which will provide managers and personnel administrators the expertise to develop and manage the human resources needed to achieve organizational goals. The impact of trade unionism on the personnel functions will be analyzed. Areas of concentration will include recruiting, selecting, training, manpower planning, wage and salary administration, union negotiations, motivation, interpersonal and group behavior. Prerequisite: Understanding concepts of management—MS 200 or MS 205.

MS 614—Marketing Management**3 Credits**

Examines the role of the marketing manager and the role of marketing in the firm and in society. The development of a marketing mix: product, price, place and promotion for a specific target market is central, with particular emphasis on the relevance of these elements to the other functional area of the firm. Prerequisite: Understanding concepts of economics—EC 110 and EC 210.

MS 615—Current Problems in Aviation**3 Credits**

An analysis of the major problem areas in aviation, covering all types of civil aviation with particular attention to the economic problems of airlines, the congestion problems at airports and in the airways, and the problems of the non-airline (general aviation) operator. The student should obtain an across-the-board picture of aviation problems and an insight into the conflicting interests involved. Prerequisite: None.

MS 618—Corporate Finance**3 Credits**

A critical study of current concepts in finance with major emphasis on the administrative and managerial implications. General corporate finance; financial policy, planning and management; financial accounts and statements. Prerequisite: Understanding concepts of management—MS 200 or MS 205.

MS 620—Managerial Psychology**3 Credits**

An examination into the causes and implications of human behavior in the organizational environment. This course provides an opportunity for the student to become familiar with the methods, subject matter and literature in the field of managerial psychology in order to consider the human problems facing management, propose solutions and evaluate the comparative theories explaining and describing human behavior. In the context of the managerial environment, class discussion will be devoted to subjects concerning causation in behavior perception, personality, learning theory, behavior modification, motivation and work, systems psychology and influencing behavior. Prerequisite: None.

MATHEMATICS

MA 105—Quantitative Skills**3 Credits**

Fundamentals and theory of algebra, basic laws of fractions, exponents, radicals, factoring, linear equations, graphs and systems of linear equations. (Credit not applicable to any degree.) Required of all students who are placed in this course.

MA 106—Basic Algebra and Trigonometry**3 Credits**

A study of the basic laws of fractions, exponents, radicals, inequalities, quadratic equations, complex polynomials, and the elements of trigonometry.

MA 111—College Mathematics for Aviation I**3 Credits**

A precalculus course with applications to navigation, aircraft performance, aircraft design, aerodynamics, stability and control. Linear equations and inequalities; systems of equations; graphing; exponents and roots; quadratic equations; ratio and proportion; logarithms; mensuration formulae; trigonometric ratios and identities. Prerequisite: MA 105 or equivalent.

MA 112—College Mathematics for Aviation II**3 Credits**

Basic calculus designed for the student of aviation. Differentiation and integration of polynomials, applications to velocity, acceleration, area, volume, work and fluid pressure, curve sketching, maximums and minimums. Prerequisite: MA 111.

MA 120—Quantitative Methods I**3 Credits**

Fundamental arithmetic and algebraic operations, functions, graphs, logarithms, matrix algebra. Prerequisite: MA 105 or equivalent.

MA 140—College Algebra**3 Credits**

Sets, equations, inequalities, functions, systems of equations, determinants, quadratic equation, partial fractions, logarithms. Prerequisite: MA 105 or equivalent.

MA 141—Trigonometry**2 Credits**

Solution of right triangles, reduction formulas, functions of several angles and multiple angles, trigonometric equations, inverse functions and complex numbers. To be taken concurrently with MA 140. Prerequisite: MA 105 or equivalent.

MA 211—Statistics with Aviation Applications**3 Credits**

Descriptive statistics; populations and samples; sampling and random samples; mean, variance and standard deviation; elementary probability; binomial distribution, Poisson distribution and their interrelationships; one and two-sample hypothesis testing involving proportions and means for large and small samples; estimation and confidence intervals; Chi-square distribution; correlation and the Pearson coefficient and applications of these topics in aviation. Prerequisite: MA 111.

MA 220—Quantitative Methods II**3 Credits**

Limits; differentiation and integration of algebraic, exponential and logarithmic functions; applications of differentiation to maximizing, and minimizing and curve sketching; the differential; marginal values, applications to economic and business problems. Prerequisite: MA 120.

MA 222—Business Statistics**3 Credits**

Measures of central tendency and dispersion; histograms; axioms and arithmetic of probability; finite sample spaces; dependent events and Bayes Theorem with applications to management problems; binomial, Poisson, and normal distribution and their interrelationships; discrete and continuous random variables; special continuous distributions; sampling distributions; hypothesis testing; estimation and confidence intervals. Prerequisite: MA 220.

MA 241—Calculus and Analytical Geometry I**4 Credits**

Graphs and equations; limits and continuity; differentiation and integration of algebraic functions; application of first and second derivatives. Prerequisite: MA 140. Corequisite: MA 141 or permission of Division Chairman.

MA 242—Calculus and Analytical Geometry II**4 Credits**

The definite integral; differentiation and integration of trigonometric and exponential functions; parametric equations; polar coordinates; arc length; center of mass. Prerequisite: MA 241.

MA 243—Calculus and Analytical Geometry III**4 Credits**

Solid analytical geometry; vector functions in three dimensions; elements of infinite series; partial differentiation; multiple integrals. Prerequisite: MA 242.

MA 300—Applied Logic**3 Credits**

Algebra of logic; truth tables; axiomatic systems; set theory; Boolean algebra; design and simplification of digital circuits. Prerequisites: MA 111 or MA 120 or MA 140.

MA 320—Decision Mathematics**3 Credits**

The mathematical concepts and applications in mathematical model building and problem solving. Included are mathematical areas which are basic to decision theory. Prerequisite: MA 222. (Not open to engineering students.)

MA 340—Differential Equations**3 Credits**

Treatment of ordinary differential equations to include principal types of first and second order equations; methods of substitution on simple higher order equations; linear equations and systems of linear equations with constant coefficients; methods of undetermined coefficients and variations of parameters; Laplace transforms, series solutions applications to physics and engineering. Prerequisite: MA 243.

MA 412—Probability and Statistics**3 Credits**

The probabilistic model; probability in finite sample spaces; conditional probability and Bayes Theorem; discrete and continuous random variables; functions of random variables; expected value, variance and standard deviation; systematic study of the major discrete and continuous random variables; moment generating functions. Prerequisite: MA 220 or Corequisite: MA 242.

- MA 430—Linear Algebra and Linear Programming** **3 Credits**
 Matrices, vectors, mathematical systems, determinants. Characteristics of linear programming problems, the simplex method, the transportation problem. Prerequisite: Junior or senior classification, consent of instructor.
- MA 441—Advanced Engineering Mathematics I** **3 Credits**
 Line integrals in rectangular coordinates. Vector fields with the study of Green, Gauss and Stokes theorems. Applications of vector field theory. Fourier series and orthogonal functions. Prerequisite: MA 243.
- MA 442—Advanced Engineering Mathematics II** **3 Credits**
 The solution of linear differential equations with variable coefficients; study of the derivation, characteristics and solutions of partial differential equations; Fourier series, Fourier transform, Laplace transform and Green's function; applications in science and engineering. Prerequisite: MA 441.
- MA 443—Complex Variables** **3 Credits**
 A study of complex numbers, complex functions, derivatives and analytic functions. Additional topics on complex integration, power series expansion, conformal mapping and their applications are covered. Prerequisite: MA 243.
- MA 299, 399, 499—Special Topics in Mathematics** **1–6 Credits**
 Lectures, seminars, laboratories, independent studies, or combinations on selected topics in mathematics. Prerequisite: Consent of instructor and approval of Division Chairman.

MILITARY SCIENCE

ARMY ROTC

- MY 101—Basic Military Science** **2 Credits**
 Organization of the Army and ROTC, with emphasis on the ROTC program and career opportunities for ROTC graduates. Historical growth and development of the Army; stressing the magnitude of management implications. Significance of military courtesy, discipline, customs and traditions of the service.
- MY 102—Basic Military Science** **2 Credits**
 Fundamentals of land navigation; development of leadership abilities through a series of practical exercises.
- MY 201—Basic Military Science** **2 Credits**
 Comparison of U.S. Army with selected foreign armies to include current threat and potential use of nuclear, biological and chemical warfare. Additionally, current communication procedures and equipment will be introduced with emphasis on practical application.
- MY 202—Basic Military Science** **2 Credits**
 Operations of the basic military team to include military geography, map reading, land navigation techniques and basic tactics. The functions, duties, and responsibilities of junior leaders.
- MY 301—Advanced Military Science** **2 Credits**
 Analysis of the leader's role in directing and coordinating the efforts of individuals and small units in the execution of offensive and defensive tactical operations, to include military geography, weapons systems, communications systems, intelligence gathering capabilities, and the role of the various branches of the Army. Discussion of internal defense/development and the country team. Prerequisite: Admission by selection and completion of Basic Military Science, six week basic camp, or minimum of four months active military service.
- MY 302—Advanced Military Science** **2 Credits**
 Case studies in leadership and management. Applicatory work emphasizing the duties and responsibilities of junior leaders. Principles of military instruction, with

emphasis on developing and improving speaking and teaching abilities. Student presentations are video-taped and critiqued during the playback.

MY 401—Advanced Military Science

2 Credits

Study of combat operations and the various military teams to include military geography; the coordination and planning necessary between the elements of the team. Analysis of selected leadership and management problems involved in unit administration. Seminars on current military topics. Prerequisite: MY 302.

MY 402—Advanced Military Science

2 Credits

Application of leadership principles, stressing responsibilities of the leader and affording experience through practical exercises. Obligations and responsibilities of an officer on active duty; chain of command; officer-enlisted relationships.

PHYSICAL EDUCATION

PE 101, 102, 201, 202—Physical Activity

½ Credit

Participation in University sponsored intramural or varsity sports. A maximum of ½ credit per trimester may be earned, and only ½ credit per intramural sport. Persons who have served a minimum of two years in the Armed Forces will be credited with two hours of Physical Activity upon application.

PHYSICAL SCIENCE

PS 101—Basic Chemistry

3 Credits

Elementary chemical theory with application for the Aeronautical Science and Aviation Management student. Covers basic atomic theory, elements, compounds and mixtures, calculation of weight and weight volume relationships, basic descriptive chemistry. (Not open to Engineering majors.) Prerequisite: MA 111 or MA 120.

PS 102—Explorations in Physics

3 Credits

Survey course in elementary physics. Stress will be placed on basic concepts, principles, and history of the development of physics. Presentations will include selected topics in mechanics, heat, light, sound, electricity and magnetism, and modern physics. (A non-credit course for Engineering and Aeronautical Science majors.) Prerequisite: MA 111 or MA 120.

PS 103—Technical Physics I

3 Credits

Survey course in elementary physics. Stress will be placed on basic physics principles. Problem solving and problem solving logic will be an important, integral part of this course. Topics will include Newton's Laws, projectile motion, circular motion, work, energy, conservation laws, momentum. (Lab fee required). (A non-credit course for Engineering majors.) Prerequisite: MA 111 or MA 120. Corequisite: MA 112.

PS 104—Technical Physics II

3 Credits

Application of basic physics principles discussed in PS 103. Other areas will include fluids, properties of matter, thermodynamics, wave motion, sound, simple harmonic motion, kinetic theory, basic electromagnetic theory and elementary circuits (Lab fee required). Prerequisites: PS 103, MA 112. (Not open to Engineering majors.)

PS 105—Chemistry I with Laboratory

4 Credits

Fundamental principles of chemistry, basic atomic theory, valence, the chemical bond, oxidation number, symbols, formulas, equation and nomenclature, chemical calculations, rates of reaction. Acids, bases and salt. Oxygen and hydrogen. The periodic system. Conservation of mass and energy. (Lab fee required). Corequisite: MA 140 or MA 241.

- PS 106—Chemistry II with Laboratory** **4 Credits**
Equilibrium, kinetics, oxidation and reduction, electrochemistry and organic chemistry; study of nomenclature, functional groups, elementary preparation, reactions and uses of organic compounds. (Lab fee required). Prerequisite: PS 105
- PS 107—Elements of Biological Science** **3 Credits**
A physical science course with emphasis on anatomy and physiology of man, including chemical and cellular basis of life, biology of organisms, and ecology.
- PS 201—Engineering Physics I (Formerly Physics I)** **5 Credits**
Vector and scalar quantities. Newton's Laws of motion and gravitation. Friction. Work. Energy. Power. Torque and rotational motion, momentum, curvilinear motion. Elastic properties of matter, fluids at rest and in motion, properties of gases. Heat. Four lectures per week and one three-hour laboratory per week. (Lab fee required). Corequisite: MA 242.
- PS 202—Engineering Physics II** **5 Credits**
Wave motion, sound waves, acoustics. Fundamental laws of electricity and magnetism. Electrostatic and electromagnetic field theory. Induced electromagnetic forces. Power, capacitance, electrical instruments. Nature of light, index of refraction, refraction by lenses, reflection from mirrors, diffraction, and interference. Four lectures per week and one four-hour laboratory per week (Lab fee required). Prerequisite: PS 201.
- PS 303—Modern Physics** **3 Credits**
Modern concepts in physics including optics. Topics include refraction, diffraction, and scattering of electromagnetic radiation, special relativity, wave-particle duality, the uncertainty principle, quantum theory of atomic structure, x-rays, lasers and nuclear reactions. Prerequisite: PS 202.
- PS 304—Man and His Environment** **3 Credits**
A survey course in the environmental problems arising from man's use and abuse of his environment. Ecological, economic, sociologic and technologic principles will be applied to the management control of pollution of the atmosphere, land and water resources of the earth. Prerequisite: PS 101 or PS 105.
- PS 299, 399, 499—Special Topics in Physical Science** **1 to 4 Credits**
Topics within the fields of the physical sciences impinging on aeronautical engineering development or practices and which are of current or anticipated interest will be discussed on a seminar basis. Prerequisite: Consent of instructor and approval of division chairman.

SAFETY OF FLIGHT

- SF 195—Safety Management** **2 Credits**
A study of basic principles of management and the essentiality of these applications to sound aviation prevention efforts. The philosophy and historical development of major concepts are examined, with particular emphasis on areas of special concern in organizational accident prevention. Students analyze the influence of morale, education and training and other substantial program elements of value to the aviation safety manager.
- SF 219—Aviation Psychology** **2 Credits**
An analysis of the factors influencing human behavior and social interactions as they pertain to aviation safety. Emphasis is placed on recognition and modification of psychological stress situations and behavioral problems that are potentially hazardous to aviation operations.

SF 250—Safety Program Development**3 Credits**

A study of basic program principles together with detailed analysis of effective procedures and techniques involved both in the development and day-to-day supervision of aviation safety programs. Students develop capability to recognize principal elements of an effective program, prepare an accident prevention plan, effectively use statistics, surveys, and safety meetings. The value and impact of pre-accident planning, safety education and efficient administrative procedures are recognized.

SF 303—Introduction to Aircraft Structures**2 Credits**

An analysis of aircraft structural factors related to the prevention and investigation of aircraft accidents. These factors include interpreting the principles of statics, tensile, compressive and shear stresses, and deformation analysis, analysis of space structures including fuselage stress analysis, wing structural analysis, shear flow, bending and torsion stresses, and failure analysis.

SF 307—Aviation Physiology**2 Credits**

An evaluation of the physiological factors involved in the cause and prevention of aviation accidents. Included are the interpretation and application of significant aeromedical information and a description of medical resources available for assistance in safety program development and management.

SF 308—Subsonic Aerodynamics**3 Credits**

A study of subsonic aerodynamics, stressing application to rotary wing aircraft. Included are application of subsonic flow phenomena, description of aerodynamic force development, interpretation of performance relationships, and analyzing stability, control, and structural considerations, as they pertain to rotary wing and subsonic fixed wing aircraft.

SF 330—Aircraft Accident Investigation**3 Credits**

A detailed evaluation of methods and procedures involved in aircraft accident investigation. The organization, duties, and procedures of the Aircraft Accident Board are analyzed. The student explores procedures for determining accident causes through analysis of such elements as the function and techniques employed by the trained accident investigator and the role of the specialized laboratory. Analyses are also made of reporting procedures and the all-important follow up work designed to avoid like or related aircraft accidents.

SOCIAL SCIENCE

SS 110—World History**3 Credits**

Designed primarily as a survey of the development and evolution of Western Civilization from 1500 to the present. Emphasis is placed on the effect of Western influence on the world.

SS 120—American History**3 Credits**

1865 to the present. Reconstruction, the age of big business, the United States as a world power, World War I, World War II, the great depression and its aftermath.

SS 205—Applied Individual-Group Psychology**1 Credit**

A course in which students will be enabled to assess and develop those personal and interpersonal dynamics necessarily related to pursuing their academic, career and life goals.

SS 210—Introduction to Sociology**3 Credits**

Integrated survey of the fundamental concepts of culture, forms of collective behavior, community and social organization, social interaction, and social change. The social effects of aviation and the impact of science on the social order living in an air-age will also be investigated.

SS 220—Introduction to Psychology**3 Credits**

Designed to help the student become aware of the many factors influencing human behavior and social interaction, and to understand the context of emotional disturbances.

SS 300—Psychology of Career Planning**1 Credit**

A course designed to make the student more aware of the important considerations in the area of career development and decision making. Areas to be covered will include occupational orientation testing, job search planning and strategy, interview techniques, and paths to career goals. Lectures will include current opportunities and trends reinforced by visits of industry representatives.

SS 310—Personality Development**3 Credits**

A course to acquaint the individual with the environmental factors that affect personality development, emotional stability, and interpersonal relationships in our society. Through an understanding of these factors, the individual will have discovered new modes of adjustment, both in his own life, and in his family and occupational setting.

SS 320—American National Government**3 Credits**

Basic issues of American democracy, constitutional principles and the executive, legislative, and judicial branches of government.

SS 330—Current History**3 Credits**

A course in selected political-social-economic issues of national and international importance. Extensive use of journals, magazines, and newspaper to supplement lectures and discussions.

SS 340—American Foreign Policy**3 Credits**

A survey of the evolution of present American foreign policy, stressing the factors which affect and shape this policy. Attention is given to present governmental offices, agencies and departments and the role each plays in policy formulation. Emphasis is on the period since World War II.

SS 398—Applied Social Psychology**3 Credits**

A course to provide practical applications of basic sociological and psychological principles to problems of youth and to familiarize the student with community services available to problem youths. Supervised by the Office of Youth Services, the student will gain insight and experience in the operation of the Office of Youth Services, rehabilitation techniques, and interpersonal relations with problem youth. Prerequisite: SS 210 or SS 220.

SS 299, 399, 499—Special Topics in the Social Sciences**1-6 Credits**

Independent study, seminars, travel seminars, and other specially arranged courses not regularly scheduled in the areas of history, sociology, psychology, and human culture in general. Prerequisite: Consent of instructor and approval of Division Chairman.

Embry-Riddle Chapter VI Aeronautical University

Academic Rules and Regulations



ACADEMIC RULES AND REGULATIONS

STUDENT RESPONSIBILITY

The student is responsible for being informed of all rules, regulations, and procedures required for continued attendance at the University. These are generally embodied in this catalog, the Student Handbook, the Dormitory Regulations Pamphlet, and other instructions that are published by the University. University rules and regulations will not be waived because a student pleads ignorance of established standards and procedures.

Academic rules, regulations, and procedures are subject to change and will be published in an Addendum to this catalog. Academic regulations apply to all students attending any E-RAU campus. Whenever the term "Academic Dean" is used, it refers to the appropriate academic authority of the campus or Resident Center.

For academic rules and regulations pertaining to graduate students, see the Graduate Catalog.

REGISTRATION

All students are expected to register for courses at their scheduled times. Students are not officially enrolled until they complete all the requirements of registration, including financial requirements as stated in the Financial Information Chapter of this catalog. Registration during the period authorized for late registration requires payment of a late registration fee.

SCHEDULE OF CLASSES

A schedule of classes is prepared for each trimester/term at all locations served by the University. The University reserves the right to make adjustments to the published schedule and to include cancellation of any class when deemed necessary and appropriate.

ACADEMIC ADVISING

At the Daytona Beach and Prescott Campuses each student is assigned a faculty advisor. At International campus locations the Center Director/Area Coordinator is responsible for academic advisement. The academic advisor assists the student in determining and scheduling an academic program to meet the student's educational aims and goals.

Academic advisors post a schedule of office hours, and all students should feel free to call on their advisors at any time assistance or discussion is appropriate.

For handicapped students, an academic advisor is available to discuss anything which affects their academic progress. The academic advisor is involved on an on-going basis with the student's academic progress and course of study. The advisor will also speak with professors regarding any academic problems that a handicapped student might encounter.

CLASS ATTENDANCE

Regular attendance and punctuality in accordance with the published schedule are expected at all times in all courses. The instructor is responsible for informing each student of the requirements and objectives of the course and insuring that the student receives a grade indicative of his performance. Accordingly, attendance may be required and may be included in the grading criteria of an individual class. There are minimum "contact hour requirements" imposed by the FAA for certain classes leading to FAA certificates; these requirements are rigorously enforced. An explanation of the cause of all absences should be given the instructor in advance when possible. Absences are counted from the first scheduled meeting of the class.

An examination normally is given in each course at the end of the trimester/term. A student who misses a final examination without advance permission of the instructor may be assigned a grade of "F" for the course. A grade of incomplete (I) may be given if the student can show evidence that the absence could not be prevented.

UNIT OF CREDIT

The trimester hour is the unit of credit generally used throughout the University. The trimester hour represents the equivalent of one hour per week of recitation or lecture for one trimester. A trimester hour of credit is equal to a semester hour of credit. The Daytona Beach and Prescott Campuses operate on a "three trimester per year" schedule. The International Campus operates on a four or five "term" (equivalent to a trimester) basis, depending on the location, other local institutions, and the lifestyle of the students.

CLASSIFICATION OF STUDENTS

Twelve trimester hours constitute the minimum credit load for full-time student status during the Fall and Spring trimesters at the Daytona Beach and Prescott campuses. Six trimester hours in each Summer term is the minimum credit load for full-time student status during the Summer term. Students carrying less than the minimum full-time load are classified as part-time students.

The maximum credit load for students is 18 credit hours per trimester, or nine credit hours per Summer term. A student whose cumulative grade point average (GPA) is 3.00 or higher may enroll for an overload but only with prior approval of the Dean of the College. Because of the varying lengths of academic terms at International Campus locations, student classification guidelines may vary. However, the following guidelines generally apply: six hours—minimum credit load for full-time status; less than six hours—part-time; 12 to 15 hours—normal maximum. Procedure for overload is the same as at the Daytona Beach and Prescott Campuses.

Students are classified at the end of each trimester/term based on the total number of credit hours earned in accordance with the following schedule:

Freshmen:	27 hours or less
Sophomores:	28–57 hours
Junior:	58–87 hours
Senior:	88 hours or more

GRADING SYSTEM

The following grades are used by the faculty to indicate the quality of work performed by students. Grade designations and grade points for each hour of academic credit are listed below:

A	Superior	4
B	Above Average	3
C	Average	2
D	Below Average	1
F	Failure	0
AU	Audit	0
I	Passing but incomplete	0
P	Passing (credit)	0
S	Satisfactory (noncredit)	0
X	Credit by examination or advanced standing	0
T	Accepted by transfer	0
N	No grade submitted by instructor	0
W	Withdrawal from course	0

The I grade is temporary and may be given only at the end of a course when the student cannot complete the required work because of severe hardship beyond his control, as determined by the instructor. A grade of I must be made up no later than the end of the sixth week (third week for Summer terms) after the end of the trimester.

If a student stops attending class and fails to complete the official withdrawal procedure, a grade of F will be assigned for each course in which he was enrolled.

A GPA is computed for each student at the end of each trimester/term. The trimester/term GPA is determined by dividing the total number of grade points earned during the trimester/term by the number of trimester hours attempted. When a W, X, P, I, N, AU, S, or P grade is recorded for a course, the hour value does not count as hours attempted. In addition to the trimester/term GPA, a cumulative GPA is computed for each student for all work completed at the University.

A course may be repeated as often as necessary or as desired with the second grade replacing the first, and the third replacing the second. The third and all subsequent grades will be used in computing GPA. All attempts will remain on the student's permanent record. Students are responsible for indicating courses being repeated at the time of registration.

For policy on the repeat of flight courses, consult the local campus flight operations manual.

AUDITING AND WITHDRAWING FROM A COURSE

A student may change registration from audit to credit only during the "Add" period at the beginning of the trimester/term. A change from credit to audit may be made only during the authorized withdrawal period (see below). When a student auditing a course fails to maintain satisfactory attendance, as determined by the instructor, a grade of W will be assigned.

A Daytona Beach or Prescott Campus student may withdraw from a course at any time during the first nine weeks of a trimester and during the first 4½ weeks of a summer term. Developmental courses cannot be dropped without approval of the appropriate Chairman. At these campuses the student must file a change of registration with the Campus Records Office. Since the length of the academic term differs at the various International Campus locations, the authorized withdrawal period also varies. As a general rule, however, withdrawal is authorized up to the midpoint of a term. When a change to withdrawal is properly filed, the student is assigned a grade of W for the course.

GRADE REPORTS

Grade reports are issued at the end of each trimester/term. Because of the requirements of the Federal Statute, Public Law 93-380, cited as the "Education Amendments of 1974," Section 438, Protection of the Rights and Privacy of Parents and Students, all reports of grades are mailed directly to the student at the address he specifies.

The University is prohibited from releasing grade information without the express written authorization of the student. Such authorization must be granted each trimester/term as blanket authorizations are prohibited by law.

ACADEMIC PROBATION AND DISMISSAL

A student whose cumulative GPA is below 2.0 for two consecutive trimesters will be placed on academic probation and will be classified as a student not in good standing. These students will not be permitted to serve as an elected member of the Student Government Association, serve on the editorial staff of a campus publication, work on campus, or participate in intercollegiate athletics. The academic program of a student on probation may be restricted by the Academic Dean. If academic probation is removed by converting a grade of I to a grade of A, B, C, or D, the academic probation will not become a part of the permanent academic record.

NOTE: Students receiving Veteran's Administration Educational Benefits who are placed on academic probation will experience an interruption in VA Educational Benefits.

Any student who has a trimester/term GPA of less than 1.0 may be academically dismissed at the discretion of the Dean of the College.

A student whose cumulative GPA is below 2.0 for three consecutive trimesters will be subject to dismissal from the University.

The University reserves the right to dismiss a student at any time if the student's conduct, academic standing, or other performance is regarded by the University as undesirable, without assigning any further reason. Undesirable conduct is defined as conduct not within the best interests of the University as construed by the Student/Faculty Conduct Committee and including, but not limited to, academic dishonesty, obstruction or disruption of University activities, theft or property damage, physical abuse of persons, or possession of dangerous and narcotic drugs. Since a transcript or diploma is defined as meeting all University

requirements, including behavioral and academic, the University reserves the right to withhold a transcript or diploma until the student's conduct has been evaluated as being acceptable.

Students entering Embry-Riddle from another college or university where they were on probationary status or were academically dismissed may be admitted on probation.

CATALOG APPLICABILITY

For a student enrolled at either the Daytona Beach or Prescott Campus, the catalog in effect when he matriculates is applicable. If a student at either of these campuses interrupts his enrollment for a period in excess of two years, or if during periods of absence from the University the student enrolls with other colleges or universities for 12 or more trimester hours of work or equivalent, the student must reapply for admission and will be under the catalog in effect the trimester of re-enrollment.

For students enrolled at International Campus locations, the catalog in effect at the time of submission of a formal application for admission is applicable.

Any enrolled student may elect to graduate under the provisions of a catalog published subsequent to the applicable catalog identified in the preceding paragraphs.

GRADUATION HONORS

Graduation honors are awarded only to students completing a baccalaureate program. Eligibility for graduation honors is based on the cumulative GPA for all courses taken at regionally accredited institutions, including those courses completed at Embry-Riddle. The level of graduation honors will in no case be higher than the level earned in E-RAU course work.

Graduation honors (undergraduate) will be awarded in accordance with the following criteria:

Honors Level	Cumulative GPA
Summa Cum Laude	3.90 - 4.00
Magna Cum Laude	3.70 - 3.89
Cum Laude	3.50 - 3.69

DEAN'S LIST AND HONOR ROLL

Recognition of academic excellence is provided on a trimester basis for full-time students. A Dean's List and Honor Roll are published at the end of each trimester. Eligibility for trimester honors is based on the following levels of academic achievement: Dean's List—GPA 3.50–4.00; Honor Roll—GPA 3.20–3.49. Trimester honors are recorded on the student's permanent record.

In a similar manner, academic recognition is granted on a periodic basis for students enrolled at International campus locations. Students who attain a cumulative GPA of 3.50 or higher for 12 or more consecutive hours of course work will be named to the Dean's List and their permanent records will be so annotated. The cumulative GPA in all such cases includes all courses completed during the most recent term. Once included on the Dean's List, the International campus student is ineligible for reconsideration for this honor until he completes an additional sequence of 12 or more credit hours of work.

GRADUATION REQUIREMENTS

All students must complete the general requirements as prescribed by the University and the specific requirements for the degree sought. The following summary of graduation requirements is provided for all students:

1. All required courses listed in the applicable catalog must be successfully completed.
2. The minimum number of credit hours required for the degree as listed in the applicable catalog must be successfully completed.
3. For a baccalaureate, a minimum of 40 hours in upper division (300 and 400 level) courses must be successfully completed. For transfer courses, the course level is determined by the educational institution which initially granted the credit. Exceptions to the 40-hour upper division requirement are authorized only when the catalog outline for the degree does not meet this requirement.
4. A minimum cumulative GPA of 2.00 for all work completed with the University is required for any undergraduate degree.
5. No student will be issued a diploma or transcript of his record until all debts or obligations owed to the University have been satisfied.
6. No student will be issued a diploma or transcript of his record unless his behavior is in good standing according to University policies and regulations. This includes but is not limited to being off disciplinary probation.

An Application for Graduation must be initiated by the student and received by the Campus Records Office a minimum of six weeks prior to the date the degree is to be awarded.

In the event the graduating student will not attend a scheduled graduation exercise, his diploma will be mailed by the Campus Records Office to the address requested by the student.

TWO DEGREES OF THE SAME RANK

Two bachelor's degrees or two associate degrees may be conferred on an individual only upon satisfactory completion of additional academic work. Specifically, for award of two baccalaureate degrees the student must complete a minimum of 30 hours more than is required for the lesser of the two degrees. Additionally, at least 60 credit hours must be completed at the University and at least 20 of the 30 additional hours must be in upper division courses. For two associate degrees the student must complete at least 12 credit hours more than is required for the lesser of the two degrees and must have completed at least 24 credit hours with the University.

AREA OF CONCENTRATION

Several degree programs require the student to select an Area of Concentration. Areas of Concentration are designed to provide the student with preparation in his specialized field. In these programs, the Area of Concentration is entered on the student's permanent record when he identifies it on his Application for Graduation.

CHANGE OF DEGREE PROGRAM

At the Daytona Beach and Prescott Campuses, students may change their degree programs during any registration period if they meet academic qualifications and the degree program capacity is not full. Students must complete a change of program form at the Campus Records Office. A change of program does not affect the catalog applicability unless the degree program was added to University offerings subsequent to the catalog in effect at the time of the student's original matriculation. In such cases, the student may pursue the degree program under any subsequent catalog in which the program is listed. See "Catalog Applicability" for additional information on page 149.

To change their degree programs, students at International Campuses should contact their Resident Center Director or Area Coordinator.

ATTENDANCE AT OTHER INSTITUTIONS

Once admitted to the University, students are required to complete all work to be applied toward their degree with the University unless advance written authorization is granted to take courses and/or training at other institutions. Students desiring to take academic courses or technical courses (including all flight courses) at other institutions while enrolled at Embry-Riddle must obtain prior permission through the Academic Dean.

Students who attend other schools without proper authorization will not receive transfer credit for the courses taken and are subject to dismissal from the University. As an exception, International Campus students may complete courses with other institutions if these courses are required in their program and are not offered by the University at the E-RAU location they attend. Acceptability standards for transfer of courses are listed in the Admissions to the University Chapter of this catalog.

FLIGHT AT OTHER INSTITUTIONS

Once a student has enrolled at Embry-Riddle, all subsequent flight training must be completed in residence at the University. Flight training at other schools while enrolled at E-RAU is not permitted without *advance written authorization* from the appropriate authority. Enrolled students who receive flight training outside Embry-Riddle without proper prior approval will not receive transfer credit for the courses taken and are subject to dismissal from the University. This applies to currently enrolled students and to students not currently enrolled but maintaining "continuous enrollment." (For definition of continuous enrollment see p. 25 of this catalog.)

In degree programs requiring flight training, at least one flight course must be completed in residence at Embry-Riddle regardless of any advanced standing or transfer credits which may be granted. Exceptions may be made for qualified, fixed-wing military trained pilots who are on active duty or have been released from flight duties within the preceding 12 months or for currently qualified, fixed-wing airline pilots.



SUMMER FLIGHT

All Aeronautical Science students and Aeronautical Studies students majoring in flight may be required to attend one full summer trimester, A and B terms, or divide this into two summers—taking A term one year and B term another year, in order to complete the requirements for graduation.

NON-DEGREE STUDENT STATUS

At International Campus locations students who meet University admission requirements are permitted to enroll in courses as Non-Degree Students without making formal application for admission to the University. These students are permitted to continue their enrollments as Non-Degree Students as long as they maintain satisfactory academic status, or until they file a formal Application for Admission as a degree candidate.

WITHDRAWAL FROM THE UNIVERSITY

A Daytona Beach or Prescott Campus student who leaves the University for any reason must officially process a withdrawal clearance. Students withdrawing at these campuses must do so through the Dean of Students Office. When a student files an official withdrawal prior to the last day of class, a "W" grade will be assigned in all courses and the date of withdrawal will be entered on the student's permanent record.

International Campus students should contact their Resident Center Directors for information on withdrawal.

READMISSION TO THE UNIVERSITY

A Daytona Beach or Prescott Campus student whose attendance at the University is interrupted may be required to file for readmission. A new Application for Admission must be filed with the University Admissions Office in the following circumstances:

a. The student has been dismissed from the University for any reason. (A student dismissed for poor scholarship may apply for readmission subsequent to completing a minimum of 15 hours of academic credit with a GPA of 2.5 or more from a regionally accredited institution, or 12 months after the day of dismissal.)

b. A student enrolls for more than 11 trimester hours, or equivalent, with other educational institutions between enrollments at the University.

c. The student is not enrolled at the University for a period of two or more consecutive years.

International Campus students should contact their Resident Center Directors for information on readmission.

PRIVACY OF STUDENT RECORDS

The rights and privacy of students are the subject of Public Law 93-380 which became effective in 1974. The law requires that a student sign individual release forms for each company, school, or individual to whom he desires that information be released. Additionally, the law authorizes students to review their files. Any student desiring additional information concerning the law should contact the Dean of Students Office.

Embry-Riddle Chapter VII Aeronautical University

Student Services and Activities



STUDENT SERVICES AND ACTIVITIES

INTRODUCTION

Embry-Riddle takes the position that a university education is more than just classes and "all-nighters" before an examination. There are many opportunities to enhance one's worth to himself and others while enrolled. Students are welcome to partake of the services described in this section but need to be aware that not all of the services listed are available on every E-RAU campus. Students should contact the individual campus in which they are interested for specific information on the services offered.

ACTIVITIES

CO-CURRICULAR ACTIVITIES

Valuable educational experiences may be gained through active participation in approved campus activities and organizations as long as they do not deter students from obtaining high academic achievement. These activities supplement the students' learning since education occurs outside the classroom. Workshops on leadership, communications, and personal growth are offered to all students. Seminars concerning time management, money management, job interviewing and physical fitness help students develop their abilities in many diversified areas.

All activities, including recreational and cultural events which take place on campus, are available and accessible to handicapped students.

Daytona Beach Campus

Fraternities on the Daytona Beach Campus include:

ALPHA ETA RHO International Aviation Fraternity, founded at the University of Southern California in 1929. Its Epsilon Rho Chapter was organized at Embry-Riddle in 1962.

ARNOLD AIR SOCIETY is a professional honorary service fraternity of Air Force ROTC cadets, founded at the University of Cincinnati in 1947. The Gill Robb Wilson Squadron of the Arnold Air Society at Embry-Riddle was organized in 1973.

DELTA CHI International Social Fraternity; founded at Cornell University, 1890; Chapter at Embry-Riddle established in 1971.

LAMBDA CHI ALPHA International Social Fraternity; founded at Boston College, 1909; colony at Embry-Riddle established in 1971; chartered in 1974.

OMICRON DELTA KAPPA National Leadership Honor Society; founded at Washington and Lee University in 1914; the Icarus Circle at Embry-Riddle chartered November 21, 1975. Members represent the ideals of leadership, scholarship and cooperation between students, faculty and staff.

SIGMA CHI International Social Fraternity; founded at Miami of Ohio University, 1855; Eta Iota Chapter at Embry-Riddle installed in 1971.

SIGMA PHI DELTA Professional Engineering Fraternity; founded at the University of Southern California in 1926; Pi Chapter at Embry-Riddle organized in 1960.

Student organizations in Daytona Beach include the Bowling League, Veterans Association, Photography Club, Brothers of the Wind, Management Club, Scuba Club, Screaming Eagles, Flight Team, Angel Flight, Parachute Club, Baptist Campus Ministry, Pacemakers, American Institute of Aeronautics and Astronautics, Army Aviation Association of America, Platoon Leaders Class, Chess Club, Phoenix Yearbook and the Avion Newspaper. New organizations in progress are the Water Ski Club and Schic Association.

On the Daytona Beach Campus the focus for activity is the University Center. It is available for dances, bridge lessons, chess tournaments and many other out-of-class activities.

Prescott Campus

At Prescott the organizations include the Parachute Club, Soccer Club, Rugby Club, Radio Control Modelers, NIFA (Flight Team), Radio Club, Pioneer (newspaper), and Circle K.

AUDITORIUM. The modern, air conditioned, 371 seat auditorium on the Prescott Campus enables students to develop their interest in drama. A variety of entertainment in cooperation with the local community enables well-rounded programming throughout the year.

ACTIVITY CENTER. On the Prescott Campus, the Activity Center provides a focus for campus activity with its gymnasium, weightlifting room, television lounge and recreational facilities. Athletic and camping gear may be checked out in the game room. The Center also houses the post office, bookstore, Activity Director's Office, Athletic Director's Office, and a conference room for meetings. Student offices housed here include Radio Club, NIFA and Circle K.

STUDENT GOVERNMENT

The purpose of student government is to promote the welfare and represent the interests of the student populace in relations with the University and other organizations. Student government maintains liaison with the administrative staff and cultivates relations with other universities. The student government organization has all full-time students as its membership.

The organization is responsible for conducting a variety of activities including dances, barbecues, concerts and movies. A judicial body of the organization assists the Dean of Students Office in governing student conduct. Students serve as voting members on academic and administrative committees.

Student government at Embry-Riddle enjoys a unique position among student organizations in the degree of responsibility and authority delegated to and administered by its membership. Student representatives are voting members on the University Board of Trustees and have one voting member on the Executive Committee of the Board of Trustees.

SPORTS

Embry-Riddle is a member of the National Collegiate Athletic Association (NCAA) and participates in intercollegiate competition on the Daytona Beach Campus in various seasonal sports. Only students in good standing may compete in collegiate athletics, such as baseball or soccer.

Intramural competition is available on the Daytona and Prescott Campuses in basketball, bowling, flag football, softball, swimming, volleyball, tennis, weightlifting, and several other sports and games.

An individually designed physical education course for credit is developed upon request of handicapped students. The program is worked out between the student and instructor and is operated on a one-to-one basis.

The NCAA size swimming pool in Daytona Beach features race lanes and a variety of low and high diving platforms and springboards. The University has an outdoor swimming pool at the Prescott Campus for use on a seasonal basis.

CAMPUS MINISTRY

The Office of Campus Ministry on the Daytona Beach Campus is staffed through a free will association of on-campus clergymen. Their ministry is expanded through the concern of local clergy ministering to many students living off-campus. While deeply concerned with students, the Office of Campus Ministry, at the same time, reaches out to the whole academic environment of faculty, administrators and staff. Ecumenical cooperation, team ministry, and a high concern for social justice questions and issues characterize the Office. Counseling, prayer, Bible study, and discussion groups are among the ministries operative now. Other E-RAU campuses offer religious services depending upon the needs and requests of the student body.

In Prescott, a quiet room is located centrally on campus. It is open 24 hours a day and is supplied with literature from local churches. This room is open to all denominations for services and activities.

PARENTS ASSOCIATION

The Parents Association is one of the many active groups in the university community. Its purpose is to facilitate close, personal relationships among students, parents, faculty and staff. The President of the Parents Association is a voting member of the University Board of Trustees. Parents are welcome to visit the campus and meet informally with the faculty and staff. When campus visits are not possible, letters or phone calls will receive personal and prompt attention by the Director of Community Relations.

ALUMNI ASSOCIATION

All E-RAU students automatically become members of the Embry-Riddle Alumni Association upon successful completion of ratings, certificate or degree programs. Thousands of alumni, who have graduated since 1926, take part in the growth and development of Embry-Riddle through local chapters of the Alumni Association located throughout the country and overseas.

The Alumni Association is active in assisting the university placement, admissions and financial aid programs. For additional information, contact the Coordinator of Alumni Affairs.

SERVICES

SERVICES, FACILITIES FOR HANDICAPPED STUDENTS

Any student entering a University for the first time must learn to adjust to the new environment. For physically handicapped students, the adjustment is not always an easy one. They must learn to cope on a daily basis with bills, inclement weather, and many other obstacles which they may never have faced alone. This chapter will include several services which the University offers to the handicapped student.

Recognizing the need for services for the handicapped student, the Coordinator for Handicapped Students has been established in the Office of Student Affairs. The University's Coordinator is Dr. Jeff Ledewitz, (904) 252-5561.

The new student is acquainted with facilities and services for the handicapped student through a one-to-one contact with the staff of the Student Affairs Office.

Early registration is arranged through the Office of Admissions and Records. Eligibility to take advantage of this is contingent on proper forms being filed with this Office. Staff members will be present at early registration to assist students through the process.

If physical limitations prevent a student from being tested in a group situation, individual arrangements will be made. This is for all testing, including proficiency, classroom, and take-home tests.

HEALTH SERVICE

On some campuses, the University maintains its own Health Service, staffed by qualified medical personnel. Local hospitals are in close proximity to both residential campuses and referral service is conducted by the medical personnel at the University Health Service.

The Health Examination form is provided by the Admissions Office and needs to be completed and returned to the University Health Service prior to formal admission (an FAA Medical WILL NOT meet this requirement). This Health Examination form provides authority from the parents/sponsors (or the student if a legal entity) to the university administration for emergency medical treatment as directed by competent medical authority. It is agreed that no legal action will be brought against the University or its officers when such authorization by the administration is granted. To save time and money, those who plan to enroll in a flight course should obtain the Class II Certificate along with completion of the University health form at the FAA Examiner's office.

CENTER FOR HUMAN DEVELOPMENT

The primary purpose of the Daytona Beach Center for Human Development is to assist students in pursuing a successful college career. Faculty and/or professionally trained counselors help students with educational, vocational or personal problems. Other staff members are available to counsel students as to the rules and regulations of the university. The academic counselor is available to discuss anything which affects the handicapped student's academic progress. The academic counselor is involved on an on-going basis with the student's academic progress and course of study.

At Prescott, members of the Dean of Students' staff, administrators and faculty members are available for counseling and guidance.

MAIL SERVICE

Prior to a student's arrival, all personal mail and baggage should be appropriately addressed as follows:

Name
Embry-Riddle Aeronautical
University
Regional Airport
Daytona Beach, FL 32014

Name
Embry-Riddle Aeronautical
University
P. O. Box 2449
Prescott, AZ 86302

All baggage and express packages must be sent prepaid. Baggage is stored at the risk of the student, and the University accepts no responsibility for theft or missing baggage. Baggage will be stored in a locked room.

During registration students are assigned a mail room box which they are required to check on a daily basis, not only for personal mail but to enable delivery of official university notices. The correct address will then be as follows:

Name
E-RAU Box # _____
Regional Airport
Daytona Beach, FL 32014

Name
E-RAU Box # _____
P. O. Box 2449
Prescott, AZ 86302

DINING SERVICE

A student can select from a variety of meal plans for the entire trimester or utilize cash for his meals. For specific information on the meal plans, contact the Director of Food Service.

OFF-CAMPUS HOUSING

Daytona Beach: About 75 percent of the University's enrollment live off campus in private accommodations. The Off-Campus Housing Office assists students looking for off-campus housing and those who are already living in private accommodations.

The Office maintains a list of properties available for students to rent and of students looking for roommates. The Off-Campus Housing Coordinator is available to advise on general housing problems and to mediate landlord/tenant disputes.

To help students find and get settled into private housing, the Off-Campus Housing staff has prepared a number of information brochures about living in Daytona Beach which are available at the office or by mail. These include Daytona Beach community information, rental information, transportation alternatives. There will be greatly expanded information about off-campus housing included in the initial Housing mailing that goes out to every new student who is approved for admission to the University. Please contact the Housing Office if you do not receive your packet promptly.

At the beginning of each trimester, the Off-Campus Housing Office arranges discount motel accommodations for students at quality motels near the University. These accommodations assure students of a comfortable, economical place to stay while they arrange to rent private housing.

For more information about Off-Campus Housing or Temporary Motel Housing, contact the Off-Campus Housing Office.

Prescott: There is a limited number of apartments, homes, and mobile homes in Prescott and the nearby communities for both married and single students. In addition, several hotels and motels will rent rooms to students on a monthly basis. The Housing Office offers an Off-Campus Housing Referral System to assist students in locating their own off-campus housing. Request information from the Housing Office.

ON-CAMPUS HOUSING

Modern, air-conditioned residential facilities are available for fulltime, unmarried or unaccompanied students. However, since applications may exceed accommodations, students are urged to apply as early as possible. Priority for room reservation, in the case of new students, is based on the date of receipt of full payment, including security deposits and the Housing contract.

There is a limited number of specially equipped apartments available for handicapped students. The University can only accommodate those handicapped students who are self-sufficient or require minimal assistance as determined by the Director of Housing.

Rental agreements are normally written for a full academic year or equivalent (if enrolled). All applicants who have been approved for admission will be mailed housing information directly from the University's Housing Office. Once this first Housing information packet has reached the prospective student, all communications relative to housing should be directed to the Housing Office. Please contact the Housing Office if you do not receive your packet promptly.

Laundry facilities are available on campus. Coin-operated service is provided for residence hall students.

INTERNATIONAL STUDENT AFFAIRS

The International Student Affairs Office at the Daytona Beach Campus is organized to meet the special needs of international students. Programs are designed to help students achieve educational goals and to experience the many facets of life in the United States. The staff acts as counselors, friends, and an advocate of international students, as well as a source of information and liaison for immigration related matters.

VETERANS ASSOCIATION

The Embry-Riddle Veterans Association consists of veterans and active duty military personnel enrolled at Embry-Riddle. Its main functions are to provide communication between the members of the administration and to assist the veteran in becoming active within the University and the community. The organization holds numerous social functions throughout the trimester. For information, contact the Veterans Association in Daytona Beach.

INDUSTRY LIAISON DIVISION

The Industry Liaison Division encompasses cooperative education and student career placement activity. This office is cognizant of the needs of the student body and the aviation industry, and it strives to fulfill both needs.

The basic goal of the staff is to assist students in obtaining career related employment in the aviation industry through cooperative education work assignments and career job placement. To accomplish this, the staff performs these functions: (1) serves as a link between the academic world and the work world; (2) acts as a referring agency between students and prospective employers by registering co-op applicants and graduating seniors; (3) establishes recruiting dates, interview schedules, and career seminars between students and representatives from industry and governmental agencies; (4) searches for qualified applicants to fill these jobs; (5) maintains reference literature on employers, salaries, interviewing techniques, resumes and cover letters.

The Industry Liaison Division is dedicated to helping students effectively utilize their talents, education, and training by assisting in the employer/employee selection process. Every student is encouraged to become knowledgeable of and utilize all the services.

This program assists the handicapped counselee become better informed about application of his capacities, assets and limitations to a career. In addition, the office helps students secure summer employment.

LEARNING RESOURCES CENTER

The Learning Resources Center supports the University's curriculum and responds to the educational needs of the faculty and student body. The Center's aviation-oriented collection relates to all aspects of university learning and extracurricular activity. Audio-visual programs and videotapes supplement the traditional library of books, documents and magazines. These materials are available in the Learning Resources Center as well as the classroom.

In addition to circulating materials, the University takes pride in its unique Research Collection. Over 10,000 volumes of historical aviation and engineering references document man's efforts in flight.

Due to the requirements of the University's aviation-oriented curriculum, many textbooks, instructional programs and audio-visual classroom materials must be designed and produced on campus. Modern media production technology, including a full-color television production system, enables the faculty to produce innovative learning programs tailored to the curriculum. The Riddle Press, the University's publishing arm, produces and distributes textbooks and other printed academic materials.

The Learning Resources Center staff assists in locating materials on campus and at other institutions in order to meet the needs of its users.

Embry-Riddle Chapter VIII Aeronautical University

Financial Assistance



FINANCIAL ASSISTANCE

FINANCIAL AID INFORMATION

Embry-Riddle participates in five federal financial aid programs, several state programs, an institutional scholarship program and an institutional work program. The University makes every effort, within the limitations of its available financial resources, to assure that no qualified student is denied the opportunity to obtain an education because of lack of funds. Funds for some of the programs are limited; therefore, it is important that a student apply on a timely basis.

Financial assistance is available in the form of grants, loans, scholarships and part-time employment. The amount of financial aid received is meant to supplement the resources of the student since the primary responsibility for meeting University expenses is with the student and his family. The student should feel the obligation to contribute toward his educational expenses through savings, summer work, other resources and part-time employment.

The amount of financial assistance a student may receive at Embry-Riddle depends upon his financial need. Need is determined by the use of a Financial Aid Form (FAF). An analysis of this application provides a uniform method of assessing a family's or independent student's ability to pay for college costs.

To apply for any of the financial aid programs, students must be U.S. citizens or permanent residents of the United States, must be enrolled with at least half-time status in a degree program, and must have not received a baccalaureate. Graduate students may apply for a Guaranteed Student Loan. All students must meet University academic requirements to continue to receive funds under the financial aid programs.

BASIC EDUCATIONAL OPPORTUNITY GRANT

The Basic Educational Opportunity Grant (BEOG) is a federal grant and does not need to be repaid. Awards range from \$226 to \$1,800 per year, and eligibility for the grant is determined by a congressionally approved formula applied consistently to all applicants. Final award amounts are based on the student's financial need, cost of attendance at E-RAU, and enrollment status. Application may be made directly to BEOG or by using the FAF.

GUARANTEED STUDENT LOAN

This program enables an undergraduate student to borrow directly from a bank, savings and loan association, or other participating lender to supplement college costs. A student may borrow up to \$2,500 each academic year to a maximum of \$7,500 for undergraduate study; a graduate student may borrow \$5,000 each academic year, with a total not exceeding \$15,000 for combined graduate and undergraduate study. Loans are made to students regardless of family income, and no interest

is charged until nine months after the student ceases to be enrolled. At that time, repayment includes principal and interest at a rate of 7 percent and may be repaid over a period of up to 10 years with a minimum monthly payment of \$30 plus interest. Applications can be obtained from lenders and should be submitted to the Financial Aid Office prior to June 1 of the year of enrollment.

COLLEGE WORK STUDY PROGRAM AND INSTITUTIONAL EMPLOYMENT

The purpose of the College Work Study Program is to stimulate and promote the part-time employment of students who need to work to offset educational expenses. This may involve work for the University itself or for a public or private non-profit organization in the community. These jobs are awarded to students who show financial need, as determined by their FAF.

Part-time work is also available to students who do not qualify for the College Work Study Program by having financial need. These students may work in the University offices or facilities. The Financial Aid Office also refers students to employment opportunities in the Daytona Beach area.

To apply for any part-time work, students must complete an Employment Application in the Financial Aid Office following registration.

NATIONAL DIRECT STUDENT LOAN

The National Direct Student Loan (NDSL) is a low interest loan for students who have great financial need, as determined by an analysis of the FAF. These loans are awarded to eligible students by the Financial Aid Office. Awards range up to \$1,250 for each academic level, with a maximum of \$5,000 for undergraduate study. Repayment of NDSLs begins nine months after a student ceases to be enrolled at the University. At that time, principal and 3% interest are repaid in monthly installments of at least \$30, for a period of up to 10 years. Loans are repaid directly to Embry-Riddle. Application may be made by submitting the FAF.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT

The Supplemental Educational Opportunity Grant (SEOG) is a grant and does not need to be repaid. It is awarded by the Financial Aid Office to students who have extreme financial need, as determined by an analysis of the FAF. Awards range from \$200 to \$1,500 per academic year, up to a maximum of \$4,000 for undergraduate study. The SEOG is matched by an equal amount of other aid, usually work aid or loans.

The NDSL and SEOG are both awarded by the Financial Aid Office, in accordance with a student's need and the availability of funds. Since funds for these programs are very limited, awards are made on a first-come, first-served basis to the most needy students. It is imperative that students' processed FAFs reach the Financial Aid Office by April 1 of the year of enrollment to receive first priority for awards.

STATE GRANT PROGRAMS

Several states have grant programs for students who attend Embry-Riddle. Each state determines eligibility for its grants, and awards are based on financial need. To apply for state grants, students must complete the FAF from their particular state of residence. States which have grant programs that are applicable to attendance at Embry-Riddle are Florida, Pennsylvania, Massachusetts, Vermont, Delaware, Rhode Island and Connecticut.

Florida high school graduates who have lived in Florida for two continuous years and enter the Daytona Beach Campus after July 31, 1979 as freshmen and after July 31, 1980 as sophomores, may qualify for the Florida Tuition Voucher. The voucher (up to \$750 for an academic year) is not based on financial need.

For further information concerning financial aid at E-RAU, contact the appropriate E-RAU Financial Aid Office, or call (904)-252-5561 ext. 350.

SCHOLARSHIPS

THE EMBRY-RIDDLE SCHOLARSHIP AWARD

This award is sponsored by the University and honors outstanding scholars at the University. It is a full tuition award to the senior who meets the requirements of the scholarship committee. In addition, there are monetary awards for academic excellence for rising sophomores and juniors in both colleges.

THE VOLUSIA COUNTY SCHOLARSHIP

Provided by the University, this scholarship is for students who have been residents of Volusia County for two years prior to matriculation at Embry-Riddle. The applicant must apply by March 1 for the September trimester by submitting:

1. Application for admission
2. Application for scholarship
3. Statement outlining goals and career plans
4. Three letters of recommendation: (a) either the high school principal or the Dean of Students of the Community College; and (b) two residents of the applicant's local community.

The value of the scholarship is \$500 per trimester for two academic years (four trimesters) in any degree curriculum.

PARENT-ALUMNI SCHOLARSHIP AWARD

The award is \$1,000 per academic year for four years for freshmen entering a degree program. The recipient will be judged on academic excellence as evidenced by high school records and standard achievement tests.

THE ZONTA SCHOLARSHIP

In honor of Amelia Earhart, the Daytona Beach Zonta Club—an organization of executive business and professional women—sponsors qualified young women to prepare for careers in aviation. Recipients are chosen yearly between June and September by the Financial Assistance Committee and the extent of financial aid determined will be applied against tuition expenses. Financial assistance will be awarded on a yearly basis.

THE WALTER MAURICE GREEN MEMORIAL SCHOLARSHIP

The scholarship was established in memory of a distinguished senior member of the E-RAU flight faculty to perpetuate the high aviation standards to which he was dedicated. Available to students engaged in academic flight beyond the Private Pilot Certificate, the value of this scholarship varies with the endowment income.

THE NINETY-NINES, INC., SCHOLARSHIP

Two \$99 scholarships are awarded per academic year for the purchase of textbooks. Established by the Ninety-Nines, Inc., this award is restricted to female juniors or seniors with financial need and a minimum grade point average of 2.0.

THE PACER SYSTEMS SCHOLARSHIP

The PACER Systems Scholarship is a grant in the amount of \$2,000 per year. To be eligible, a student must be enrolled or accepted for enrollment as a full-time student at Embry-Riddle's Prescott Campus. Selection will be made on the basis of financial need and academic achievement.

NATIONAL AIRLINES MANAGEMENT CLUB SCHOLARSHIP

Four awards of \$1,000 each are given annually to two incoming freshmen and two upperclassmen, all of whom must be enrolled in Aeronautical Engineering or Aviation Management. Candidates for award must be from Florida or an area served by National Airlines. Award based on merit.

THE JOHN STACK MEMORIAL SCHOLARSHIP

The award is \$1,500 for an academic year (two trimesters) for a junior in the Aeronautical Engineering Program. The Financial Assistance Committee selects the recipient on the basis of academic excellence for previous study at Embry-Riddle.

THE RICHARD L. VAGNOZZI MEMORIAL SCHOLARSHIP

In memory of a former E-RAU student, this award is given to a senior enrolled in a program combined with flight. Value of award is \$1,000 per academic year.

THE PETER MOYER MEMORIAL SCHOLARSHIP

This scholarship is available to students who are members of Delta Chi Fraternity and in flight related academic programs (Aeronautical Science or Aeronautical Studies—Flight Technology). The amount is \$600 per academic year (two trimesters).

THE MAURICE F. TAYLOR SCHOLARSHIP

The award is \$1,000 per academic year (\$500 per trimester) to a U.S. citizen from a middle-income level family, enrolled in a four year aviation career program. Student must show academic progress to be eligible.

PETROLEUM HELICOPTERS, INC., SCHOLARSHIP

The \$500 scholarship, which includes an offer of employment with Petroleum Helicopters, Inc., is given four times a year. Final approval will be made by Petroleum Helicopters, Inc., and based on grade point average, classroom attendance, attitude and personality. Enrollment in helicopter maintenance course is preferred.

EMERGENCY LOAN PROGRAMS

Ila Brignall Memorial
Comanche Flyer Foundation
Strickler Loan Fund

The emergency loan funds are administered by the University Cashier. Students are eligible to borrow up to \$25 to be repaid in two weeks.

AIR FORCE ROTC SCHOLARSHIPS

AFROTC offers five scholarships yearly that cover varying amounts of students' four year college education: two, two and one-half, three, three and one-half, and four years. Each scholarship pays for all tuition, laboratory and incidental fees, textbooks and includes a \$100 per month (tax free) allowance during the specified period.

Students who have never enrolled in a college or university as a full-time student are eligible for the four year scholarship, provided they will complete their four year degree before their 25th birthday. These students must apply before January 15 one year prior to the date of their college entry. High school students interested in a four year scholarship must apply before January 15 of their senior year. Applications should be directed to Air Force ROTC Headquarters, Maxwell Air Force Base, AL 36112. Scholarship applications are available at the AFROTC department at Embry-Riddle.

The other AFROTC scholarships are open to students who are enrolled in the Air Force ROTC program at Embry-Riddle. Freshmen compete for three and one-half and three year scholarships. Sophomores compete for two and one-half and two year scholarships. Students apply for these scholarships through the AFROTC department at Embry-Riddle.

In December 1971, Congress enacted a bill that made Air Force ROTC scholarships available to junior college transferees. They can compete for the two year scholarships, which are awarded on a competitive basis upon completion of a six-week field training encampment.

Even if a student does not receive an Air Force ROTC scholarship, he may apply to enter the Air Force Professional Officers Course (POC) during his sophomore year. POC is the advanced ROTC program for juniors and seniors. All students in POC, scholarship and non-scholarship, receive a \$100 tax free allowance each month. Interested students should apply for POC admission early in their sophomore year through the Air Force ROTC department at Embry-Riddle.

ARMY ROTC SCHOLARSHIPS

The Army ROTC Program offers scholarships that provide full tuition, fees and required textbooks to qualified ROTC students. Additionally, scholarship recipients receive \$100 (tax-free) per month. The Army ROTC program is offered in both a four year and two year option. Applications for one, two, and three year scholarships are available in the Spring Trimester at the Army ROTC Department. For information concerning eligibility and application, see Page 34 of the Academic Programs chapter of this catalog.

MARINE CORPS COMMISSIONING

The Marine Corps offers three training programs: Platoon Leaders Class Program (PLC), either a six or ten week session; Aviation Officer Candidate Program, 10 weeks; and Unrestricted Officer Candidate Program, 10 week session. Applicants for either the PLC, AOC or OC Program are paid during the training. The six week training sessions pay approximately \$700 each and do not incur any active duty obligation. Pay during the ten week sessions is \$1,200 and does not incur any active duty obligation.

Please note additional information concerning Reserve Officer Training Programs and Military Training Programs under the Academic Programs Section of this catalog, Page 36.

FLIGHT FELLOWSHIP PROGRAM

The Flight Fellowship Program provides an academic tuition waiver of from 80% to 100% per trimester to selected students carrying a flight instructional load of 144 hours (12 hours per week for 12 of 16 weeks). Fellowship recipients who exceed the 144 hours of flight instruction during a trimester will be paid for the extra hours in accordance with the established hourly rate. For additional information, contact the Dean of Aviation Technology.

AVIATION MAINTENANCE FELLOWSHIP PROGRAM

The Maintenance Fellowship Program provides a 75% to 100% tuition waiver per trimester to selected students, with Airframe and Powerplant licenses, who are selected to serve as Assistant Maintenance Instructors. The fellowship students must agree to a maintenance instructional load of 300 hours per trimester (20 hours per week for 15 of 16 weeks). Maintenance Fellows who exceed the normal load during the trimester will be paid for the extra hours in accordance with the currently established hourly rate. Selection of students for the Maintenance Fellowship Program will be from those who have participated in the Leadership Program; however, successful completion of the Leadership Program is not an automatic guarantee of selection for the Maintenance Fellowship Program. For additional information, contact the Dean of Aviation Technology.

Embry-Riddle Chapter IX Aeronautical University

Financial Information



FINANCIAL INFORMATION

The University reserves the right to make revisions to the fees, prices, schedules and terms of payment and other financial elements listed in this catalog at any time without notice.

I. TUITION

Undergraduate:

Full-time students (12-18 hours)	\$1,200 per trimester
Part-time students (less than 12 hours)	\$100 per credit hour
Excess hours (more than 18 hours)	\$100 per credit hour
Full-time students taking graduate courses pay \$1,200 tuition plus	\$57.50 per grad. hour
Summer; full-time (6 to 9 credit hours per term) charged independently each term	\$600

Graduate:

Daytona Beach Campus	\$115 per credit hour
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This does not include flight courses. See page 172 for flight lab deposit information.

II. REQUIRED ADVANCE DEPOSITS (incoming students only)

Tuition deposit	\$150
International Student Deposit	\$3,000
Dormitory deposit	\$ 95
(For payment procedures, see page 176)	

III. FEES

1. Student Fees: The following two fees are required of all students.

a. Student Government Association	\$11
b. Application Fee*	
U.S.	\$25
International	\$50

*Non-refundable.

2. **Lab Fees:** Students may determine which, if any, of the following fees are relevant to their training program by referring to the Degree Programs and Course Descriptions Chapters of this Catalog.

Course	Fee	Course	Fee
AE 420	\$10	EL 103	\$10
AE 421	\$10	EL 104	\$10
AE 299	\$ *	EL 211	\$10
AE 399	\$ *	EL 221	\$10
AE 499	\$ *	EL 311	\$10
All AMT Courses,		EL 321	\$10
Except 101, 102, 154, 155	\$ 5	ES 307	\$15
AS 105	\$35	ES 401	\$10
AS 201	\$10	ES 403	\$10
AV 340	\$10	ES 407	\$10
AV 341	\$10	ES 410	\$20
CT 101	\$20	HU 114	\$10
All other CT Courses		HU 115	\$10
Except 205, 220, 460	\$35	PS 103	\$10
Course Equivalency Exam	\$45	PS 104	\$10
Cooperative Education	\$200	PS 105	\$20
per trimester		PS 106	\$20
EL 101	\$10	PS 201	\$20
EL 102	\$10	PS 202	\$20

*Computer charge as appropriate

3. Flight Fees—Deposits

FLIGHT LAB DEPOSITS:

The flight lab deposit is intended to cover the cost of resources (aircraft, simulators, ground trainers, oral instruction) utilized in a flight course. The amount of the flight lab deposit is based on a projection of the amount of resources the student is likely to use, according to students' performance levels and the aircraft hourly rate. Records show approximately 90% of the students utilize the full deposit, plus or minus 10%. Students who withdraw, fail a flight course or are dismissed from the flight program will be refunded their remaining unused flight lab deposit after deduction of a \$50 administrative fee and all applicable charges.

Course No.	Course Title	Daytona Beach	Prescott
FA 102	Primary Flight	\$1,300	\$1,375
FA 103	Basic Flight	1,650	1,800
FA 114	Commercial Instrument 1	1,425	—
FA 203	Intermediate Flight	1,650	1,775
FA 204	Advanced Flight 1	1,325	1,200
FA 212	Commercial Instrument 2	1,400	—
FA 213	Commercial Instrument 3	1,200	—
FA 299/399	Special Topics	TBA	—
/499			
FA 305	Advanced Flight 2	1,800	—

FA 306	Instrument Rating	1,300	—
FA 307	Instrument Rating	1,600	—
FA 308P	Instrument Rating	—	1,375
FA 311	Advanced Flight II	—	1,875
FA 312	Commercial Instrument IV	2,000	—
FA 313	Advanced Flight III	—	2,225
FA 340	Multi-engine Flight	1,650	1,200
FA 340P	Multi-engine	—	1,200
FA 400	Certified Flight Instructor	1,425	—
FA 407	CFI Instrument	1,000	—
FA 408	CFI Instrument	1,275	—
FA 409P	CFI Instrument	—	1,050
FA 410P	CFI Single Engine	—	1,025
FA 411	CFI Multi-engine	2,300	1,750
FA 412	Advanced Instrument (Mooney)	1,400	—
FA 413P	Advanced Instrument I-SE	—	\$1,100
FA 414	Advanced Instrument (310)	1,600	—
FA 415	Advanced Flight IV	—	2,225
FA 416P	Advanced Instrument II-ME	—	1,150
FT 505	Cessna Citation Ground School	300	—
AS 505	Cessna Citation Ground School (Full-time, degree students)	200	—
FT 518	Flight Engineer, FAA Written Preparation	300	—
AS/FT 519	Advanced Flight Engineer I	230**	—
FA/FT 520	Advanced Flight Engineer II	3,695**	—
FT 549	Airline Transport Pilot, FAA Written Preparation	300	—
FA/FT 550	Boeing 727 Type Rating Course	TBA**	—
FA/FT 551	Cessna Citation Type Rating	6,150**	—

** Advanced flight course fees are contingent on the student completing the course in the prescribed number of hours. Additional instruction and/or use of aircraft will be charged according to the rate contained in the aircraft rate schedule page 174 of this Catalog.

*Aircraft Rates—per hour

Type	Equipment/ Instruction	Dual	Solo	Dual Instrument
Primary Aircraft/172	\$	\$39.50	\$26.50	\$39.50
Primary Aircraft-Grumman Tiger (Prescott only)		53.00	28.00	40.50
Complex Aircraft—Mooney Ranger		53.00	40.00	53.00
Twin Engine Aircraft— Seminole (Prescott only)		74.50		76.00
Twin Engine Aircraft—Cessna 310		101.00	101.00	91.00
Cessna Citation Aircraft		615.00		
Boeing 727		1,750.00		
Oral Instruction Ground Trainer	15.00			
Flight Simulator (Single Engine)	17.50			
Flight Simulator (Multi-Engine)	20.00			
Flight Simulator (Boeing 727)	130.00			

*Due to the uncertainty of fuel costs in the immediate future, it may be necessary to apply a fuel surcharge to the aircraft hourly rate.

4. Housing Fees:

	Daytona Beach	Prescott
Housing Charges (depending upon facility)	\$510-595	\$1,000-1,200*
Security Deposit	95	95

*The Prescott Campus offers a combined room and board program. Total cost depends upon housing and meal plan options selected.

Policy for Security Deposit

Students entering university housing for the first time will be charged a one-time housing Security Deposit to remain on account as long as the student is under a valid Housing Contract. Priority for acceptance into university housing is based upon date of receipt of full payment including the Security Deposit and a signed Housing Contract.

The Security Deposit is a safeguard against damages incurred on University property during student's stay; cost of damages will be billed to the student when in housing; any unpaid balance will be taken out of the deposit and refund to student will be prorated accordingly and mailed after leaving campus. However, if cost of property damage exceeds the deposit, the student forfeits deposit and must pay the balance of costs beyond those covered by deposit. For schedule of Security Deposit Refund, see page 177.

5. Insurance:

Proof of hospital/medical coverage is required of all students.

At the Daytona Beach Campus, a student group insurance program is offered. Rates are determined annually; premiums are non-refundable.

6. Miscellaneous Fees:

1. Evaluation Fee	\$ 10*
2. Flight Course Equivalency Examination	75*
3. Late Registration Fee	50*
4. Reinstatement of a cancelled registration	100*
5. Late Payment Fee	25*
6. International Student Service Fee (per trimester)	50
7. ROTC (Army and Air Force) (per trimester)	7
8. Maintenance Technology Tools (Purchased and retained by student)	350-400*
9. Flight Evaluation Fee	40*
10. FAA Designated Mechanic Examiner Fee	100*

*Non-refundable

IV. PAYMENT PROCEDURE:

Payment of tuition and fees is due at registration for all students registering at the regular registration period and on the first day of classes for students electing to advance register.

Registrations are subject to cancellation if tuition and fees are unpaid subsequent to published deadline dates.

Master Charge and Visa credit cards are accepted toward payment of tuition and fees.

V. ESTIMATED EXPENSES PER TRIMESTER:

The following table gives an estimate of the necessary expenses of a student during a trimester of full-time study. All figures are subject to variation. The estimate does not include expenses for flight courses, transportation, clothing, and other personal items.

Undergraduate Full-Time

Tuition	\$1,200
Room & Board	975*
Insurance	34
Student Government Association	11
Lab Fees	10*
Books	100
	<hr/>
	\$2,330

*This amount varies according to the options chosen.

VI. REFUNDABLE FEES & CHARGES:

A. The following are refundable according to the withdrawal schedule below:

- | | |
|--|-------------------------------|
| 1. Tuition | 4. Housing |
| 2. Lab Fees | 5. Int'l. Student Service Fee |
| 3. Student Government As-
soc. Dues | 6. ROTC Activity Fee |

Withdrawal Schedule:

Full Trimester

Period I: First two calendar weeks	80%
Period II: Third calendar week	60%
Period III: Fourth calendar week	40%
Period IV: Fifth calendar week	20%
Period V: Sixth calendar week	0%

Summer Term

Period I: Class days 1-6	80%
Period II: Class days 7-9	60%
Period III: Class days 10-12	40%
Period IV: Class days 13-15	20%
Period V: Class days 16 and after	0%

NOTE: Students who make advance payments of tuition and/or fees and who withdraw after the deadline for claiming advance deposit refunds but prior to the first day of instruction will receive a refund of all payments, less the required deposits.

B. Advance Registration Deposit (incumbent students only)	Refundable in full, providing a minimum of 30 days advance written notice is given.
C. Student Housing Security Deposit	Refundable upon: graduation, permanent withdrawal from university housing; or approved contract release.
D. Required Advance Tuition Deposit and Student Housing Security Deposit (incoming students only)	Refundable in full, provided written notice is given at least 60 days prior to date of registration.
E. Flight Lab Deposits	See Flight Lab Deposits page 172 of this Catalog.

VII. REFUND POLICY:

Only those students who officially withdraw from the University through the Dean of Students Office are eligible for a percentage refund of charges as set forth above. The effective date of the withdrawal as determined by the Dean of Students will govern the refund computations.

Students who are administratively withdrawn for non-payment of fees will be withdrawn effective the last day of the first withdrawal period or on the last date of class attendance, whichever occurs later.

Only students who are in good standing at the time of withdrawal are entitled to a refund. Those students "not in good standing" include individuals under disciplinary suspension, dismissal, or withdrawal in lieu of disciplinary action.

Percentage refund of charges is made from the amounts shown on the invoice form. The refund amount is the net percentage (less any scholarships, grants, loans, or other financial assistance as determined by the Financial Aid Office) of total charges, including tuition, academic lab fees, housing and linen charges, and SGA dues.

Requests for refunds which are not covered by the provisions cited above must be submitted in writing to the University's Payment and Refund Committee through the Bursar's Office.

Before any request for refund will be considered by the Payment and Refund Committee, proper documentation in the form of a clearance or change of registration must be completed.

- 1) Requests for refunds due to circumstances clearly beyond the student's control, such as illness, required military service, etc., must be accompanied by appropriate documentation, such as a physician's statement.
- 2) A request for a refund must be submitted within 60 days from the date the student completes a change in registration form or a clearance form.
- 3) Refund requests normally will be processed within 10 working days. If the refund is approved, the amount will be credited to student's account, or a check will be issued within one week of approval. If the refund is disapproved, a letter of explanation will be provided the student within that period.

VIII. DELINQUENT ACCOUNTS

Student tuition and fees are payable according to the final payment date of each trimester and are considered delinquent subsequent to the due date. In the instance of debts incurred subsequent to registration, accounts are due at the date of billing and are considered delinquent 30 days hence. When a student's account is delinquent, all academic and administrative processing of his records will be suspended, information on class performance and grades will be withheld and registration for a new trimester, graduation, or release of transcripts will be denied. A student failing to satisfy his financial obligations will be subject to dismissal.



Embry-Riddle Chapter X Aeronautical University

University Campuses



UNIVERSITY CAMPUSES

DAYTONA BEACH CAMPUS

Over the past 15 years E-RAU's Daytona Beach Campus, a multi-million dollar complex dedicated to aviation education, has emerged on one corner of the Daytona Beach Regional Airport. On this parcel of 86 acres is perhaps the most visible evidence of E-RAU's endeavor, the fleet of 70 late-model, fully-equipped Cessna and Mooney aircraft parked on "Riddle Ramp."

Adjacent to the ramp is the Gill Robb Wilson Aviation Technology Center where students receive instruction in classrooms, single-engine aircraft simulators, a multi-engine simulator, a weather center, and a dispatch center.

Near the flight center is the Samuel Goldman Aviation Maintenance Technology Center. Here, instruction in the maintenance and repair of fixed wing and helicopter airframes, powerplants (reciprocating and turbo-jet), and avionics is conducted. This 46,000 square foot, three-building complex contains 11 laboratories and 10 classrooms equipped with the most modern tools to provide the student with both basic aircraft maintenance theory and "hands-on" techniques for readying aircraft for flight. An engine test cell (both reciprocating and jet) provides students with an exceptional means for determining how well the engine they just repaired and assembled performs in a "live" situation.

Adjacent is the newest academic building, the Engineering Science Laboratories. This building, which was designed primarily for the Aeronautical Engineering program, houses subsonic and supersonic wind tunnels and a smoke tunnel. These enable the student to visualize complex air flow patterns and to measure flow velocity, pressure distributions, and aerodynamic forces on airfoil and airplane models. Also in this laboratory building are structures, materials, and design laboratories. On the second floor of the building are faculty offices and a computer terminal room with direct lines to the Computer Center for student/faculty use.

The Lindbergh Center, near the Engineering Science Laboratories, provides classroom facilities for students pursuing the bachelor or master degree programs and other modern instructional aids.

The Computer Center provides "hands-on" opportunity for students to check out computer programs just written to solve problems in management, logistics, engineering and related disciplines. It also assists the staff in course registration, flight scheduling, and financial transactions, since the computer is linked to remote terminals throughout the campus via a centralized time-sharing system.

The Learning Resources Center contains, along with the normal resources and reference material which serve most higher education facilities, the Embry-Riddle Research Collection, a special aviation library comprised of books, documents and periodicals dating from the early 1900's which document developments in aviation as they occurred. In addition, the Learning Resources Center includes audio-visual production where instructional aids are created to meet the instructional needs of the faculty. Modern laboratories—learning, chemistry, mathematics and physics—round out the Lindbergh Center.

Across from the Lindbergh Center is the area of the campus set aside for student cultural development and activities, the University Center. Within this Center are a full-service cafeteria, well equipped bookstore, mailroom, Career Planning, Cooperative Education and Placement Offices, pub, and meeting rooms. Social events are regularly scheduled by the Director of Student Activities. An atmosphere of informal relaxation characterizes the University Center where there are opportunities to exchange viewpoints with other students from as many as 40 foreign countries. For those students who wish to acquire a deep Florida sun tan or to frolic in the Atlantic Ocean, "The World's Most Famous Beach" is fewer than six miles from campus where public bus service is scheduled every half-hour.

For those students who prefer to live on campus, there are various accommodations. Both a three-story dormitory and a two-story modern housing complex with external entrance/exit for each room are less than 100 yards from the Olympic size swimming pool and the University Center. These, along with the University-owned off-campus apartment complex (also with its own large swimming pool) house up to 900 students. All housing is air conditioned, and some rooms are designed to meet the needs of the mobility handicapped. For students desiring off-campus accommodations, the University maintains a current referral service of facilities in the Daytona Beach area for both married and single students.

The newly completed central parking lot and the two student housing parking lots provide permanent space for 700 vehicles in addition to the existing 1,000 spaces. Plans are being formulated to relocate the remaining support functions—administration, ROTC, and the University Services Park (physical plant, material management, print shop)—from the airport terminal side to the permanent campus. During the 1980s, the major building facilities will be completed.

INTERNATIONAL CAMPUS

Embry-Riddle serves aviation on a global scale. The E-RAU network of program centers stretches from Diamond Head in Hawaii to the Brandenburg Gate of Berlin. Some 80 different locations, with more being established each year, serve aviation communities world-wide with programs ranging from certificates to associate's, bachelor's and master's degrees in aeronautical career fields.

The network of E-RAU Resident Centers constitutes the E-RAU International Campus. Students in this E-RAU campus typically are adults already working in, or candidates for, an aviation career. Courses are generally conducted on week nights, but day and weekend schedules are also available. The term length varies among locations from five weeks to 11 weeks, with most locations operating on five eight-week terms a year.

Currently the majority of centers in the E-RAU International Campus is established at military bases. Generally these programs are open only to military members, government employees and their dependents. However, the Resident Centers at San Francisco, Federal Express-Memphis, the Miami Graduate Center and the Miami Education Consortium are primarily for civilian students. The Virginia Resident Center-Fort Knox, Kentucky, and NAS Millington-Memphis, Tennessee, serve both civilians and government employees. More E-RAU Resident Centers will be opening to more categories of students in the future.

The E-RAU International Campus offers selected certificate and degree programs throughout its network of locations. A key feature of the E-RAU network system is that completion of any E-RAU degree or program is enhanced for the mobile student. A degree program started in Daytona Beach, Florida, may be completed in Incirlik, Turkey.

The Resident Centers offer certificate programs in Aviation Maintenance Technology (AMT) to assist experienced maintenance personnel in professional development. Many AMT students acquire the FAA Airframe and/or Powerplant (A&P) certification through program offerings at Fort Ord, California; Hawaii; NAS Millington, Tennessee; Fort Campbell, Kentucky; Fort Eustis-Langley AFB, Virginia; NAS Patuxent River, Maryland; Shaw AFB, South Carolina; and Hunter AAF, Georgia. Overseas the AMT program is available at RAF Upper Heyford; RAF Alconbury; RAF Mildenhall and RAF Bentwaters in England; Torrejon and Rota in Spain, and at the following locations in West Germany: Bitburg, Spangdahlem, Ramstein, Zweibrücken, Mannheim, Rhein Main, Finthen, Wiesbaden and Hanau.

The associate degree programs in Aviation Maintenance Technology and Aircraft Maintenance are offered wherever the E-RAU AMT courses are conducted. The Bachelor of Science in Aviation Maintenance Management may be completed at any E-RAU location if the student has the FAA and A&P certificate.

An Avionics/Electronics program is available at certain locations in Europe. Students may earn an E-RAU certificate in Radiotelephone Maintenance Technology (First and/or Second Class) and one in Avionics Maintenance Technology. The electronics program is currently offered at Augsburg, Ulm, Rhein Main, Wiesbaden, Ramstein and Zweibrücken, Germany; Rota, Spain; and RAF Lakenheath and RAF Bentwaters, England.

Generally, all E-RAU Resident Centers assure total course work availability for the following associate and bachelor degree programs: Aviation Administration, Aviation Management, Professional Aeronautics, General Aeronautics and Aeronautical Studies with certain areas of concentration.

The Masters in Business Administration/Aviation degree and the Masters in Aeronautical Science degree are available in Miami, Florida; Fort Rucker, Alabama; Fort Eustis-Langley AFB, Virginia; Pope AFB, North Carolina; RAF Upper Heyford; RAF Mildenhall and RAF Bentwaters in England; Ramstein AFB, Rhein Main AFB, Wuerzburg, and Hanau-Fulda, West Germany, and Torrejon, Spain. The Master's in Aviation is also available at Federal Express Corporation in Memphis, Tennessee. The graduate programs are being expanded to other locations.

The Resident Centers are growing continually in service to the many aviation interested communities. Dynamic and innovative programs with emphasis on academic quality and integrity are hallmarks of the E-RAU effort. The locations of the individual Resident Centers contribute to this innovative aviation education leadership. For instance, the E-RAU International Campus sponsors special seminars with the biennial International Air Show at Farnborough, England, and in West Germany special topics programs are frequently offered. Often it is quite convenient for our students to visit famous aviation, historical, manufacturing, service or research sites and activities near the Resident Centers. The locations contribute considerably to the use of expert guest lecturers from the total aeronautical spectrum. These "real time" practitioners lend state-of-the-art expertise to the E-RAU programs.

Current information concerning program details is available at the Office of the Dean, College of Continuing Education in Daytona Beach, or at any of the E-RAU Resident Centers. Interested students or potential students should write the Dean or visit a Resident Center to discuss programs, evaluate academic backgrounds, select courses and gain professionalism in aviation.

MAIN CAMPUS

The Main Campus houses the University's corporate offices. The offices of the President, Vice President and Director of Marketing, Vice President and Director of Administration, Senior Vice President and Provost of the International Campus, Corporate Secretary, Development staff and other system offices are located here. The Main Campus also serves as the headquarters of the International Campus. Situated on 11 acres 17 miles north of the Daytona Beach Campus in a beautifully wooded setting, the Main Campus is adjacent to I-95, the major north-south interstate freeway.

PRESCOTT CAMPUS

Students who choose the E-RAU western campus at Prescott, Arizona, are fortunate that such an outstanding educational facility is in one of the most pleasant living environments imaginable. The picturesque campus covers 511 acres almost in the geographic center of the Grand Canyon State, seven miles north of Prescott, and 100 miles northwest of Phoenix.

With its mile-high elevation, Prescott enjoys "four seasons" weather. It seldom gets too hot or too cold. Surrounded by great forests of Ponderosa pines, Prescott enjoys mostly bright, clear sunny days all year long. The average 350 days a year of flying weather was one of the chief reasons Embry-Riddle selected Prescott for its western campus.

One can pursue an aviation education on a superb campus, surrounded by majestic mountains, with modern classrooms, dormitories and other facilities that make life and learning more enjoyable.

The aviation programs at Prescott are the same high caliber academic and flight programs as those provided at the Daytona Beach campus.

In addition to the Aeronautical Science degree program, the Prescott campus offers baccalaureate programs in Aeronautical Studies, Aviation Management, Aviation Administration, Professional Aeronautics, Aviation Computer Technology, and Aeronautical Engineering.

Outstanding flight instruction is given in the E-RAU Prescott fleet of Grumman Tiger single-engine trainers and Piper Seminole multi-engine planes. All planes feature the latest in Collins avionics equipment and pilot conveniences.

The flight operations complex is at the Prescott Municipal Airport, just minutes from the campus.

The new, two-story Flight Operations building houses ground training classrooms, offices for the flight instructors and four flight simulators (three single-engine and one multi-engine) to help students perfect flying techniques.

The dispatch center is in an adjacent building, so students have a short walk to the aircraft assigned to them.

Any qualified E-RAU student may enroll in the on-campus Air Force ROTC program. These studies prepare college men and women for active duty assignments as Air Force commissioned officers. The Prescott campus has a flying team that competes in air meets of the National Inter-collegiate Flying Association.

On the Prescott Campus—as in Daytona Beach—students learn the aviation business from professionals. More than half of the faculty has both academic qualifications and solid aviation experience. On the ground and in the air, the student benefits from the knowledge of former airline pilots, Navy and Air Force aviators, FAA inspectors, and meteorologists.

The student-teacher ratio is 20-to-1. This provides considerable individual and personal attention in the classroom and on the flight line. The Media Center, which has over 20,000 volumes, is a short distance from the classrooms. This is a complete reference center with special educational materials as well as current newspapers, magazines and other periodicals. Nearby is the audio-visual center where students may use a wide range of sophisticated electronic learning aids to help in their

studies. Seminars, workshops and other events covering a variety of topics are offered in the campus auditorium. This building features amphitheater style seating for 371 people with excellent viewing from every seat. The auditorium has superb acoustics and is fully equipped with two concert grand pianos, theatrical lighting and complete audio-visual systems.

Students, faculty and staff at Prescott enjoy the availability of a wide variety of leisure time activities.

The Student Activities Department, in coordination with the Student Association, organizes a wide range of activities including dances, barbecues, concerts, movies and several special events.

The Recreational Sports Department sponsors intramural competition in many popular team, dual and individual sports. Campus recreational facilities include a gymnasium, weight room, outdoor swimming pool, jogging trails and a game room.

Because of its location, Prescott attracts outdoor professionals in wilderness survival, river rafting, kayaking and rock climbing. Downhill and cross-country skiing, lake fishing and boating, the Grand Canyon, national wilderness areas, ghost towns, Indian country and the Arizona deserts are all within two hours travel by automobile.

Within six hours driving time one can enjoy the beaches, deep-sea fishing and other attractions of Southern California; the international flavor of Old Mexico with its fiestas, bullfights, shopping bargains; or the Broadway shows, Paris revues and big name entertainment of Las Vegas.

However, there is also much to enjoy in Prescott, a small, friendly community with its distinctively western atmosphere, informality and openness. Life in Prescott revolves around the Courthouse Plaza. Many ERAU students agree with residents and visitors who find the "old fashioned" town square, complete with gazebo-type bandstand, refreshingly welcome in today's busy world.

Known as the softball capital of the world, Prescott also offers tennis, baseball, basketball, hunting, rockhounding or simply strolls along the forest trails. Many enjoy golfing on a course that is open year round. However, whether one chooses the Prescott Campus, one of the many International Campus locations or the Daytona Beach Campus, Embry-Riddle is dedicated to helping prepare young men and women assume positions of leadership, responsibility and importance in every phase of the aviation and aerospace industries.

Remember, there is no short cut to success in aviation. Today, a college degree is a must to assure not only initial entry into aviation but also to take advantage of future opportunities for promotion.

Everyone at Prescott is eager to help the student get started on his aviation career. For information, call, write, or visit the beautiful, efficient and functional campus at Prescott, Arizona.

Embry-Riddle Chapter XI Aeronautical University

Faculty and Administration



FACULTY AND ADMINISTRATION

The administration and faculty of Embry-Riddle are listed below. An asterisk (*) denotes the International Campus; a cross (†) denotes the Prescott Campus; a double cross (‡) denotes the Main Campus; and all others are members of the Daytona Beach Campus.

OFFICERS OF THE UNIVERSITY

Jack R. Hunt‡

President and Chief Executive Officer. B.S., Pepperdine College; M.S., Barry College; C; LTA & HTA.

John A. Fidel

Executive Vice President and Provost of Daytona Beach Campus. B.S., U.S. Naval Academy; C-H&I.

L. William Motzel*

Senior Vice President and Provost of International Campus; B.A., University of Notre Dame; M.S.E.E., Saint Louis University; Ph.D., Catholic University of America; P; ASEL.

Harry K. Miller, Jr.†

Vice President and Provost of Prescott Campus. B.S., Lebanon Valley College; M.A., Lehigh University; Ph.D., Stanford University; Postdoctoral studies, University of Michigan.

Jeffrey H. Ledewitz‡

Vice President and Director of University Administration. B.A., Stetson University; M.A., George Washington University; Ed.D., Oklahoma State University.

Richard J. Queenan‡

Vice President and Director of Marketing. Harvard Business School A.M.P. 1969.

Charles S. Williams

Vice President and Dean of Academic Affairs. B.S., U.S. Naval Academy; M.A., Stanford University; C.

Dianne R. Thompson‡

Corporate Secretary. A.A., Daytona Beach Community College.

ACADEMIC AFFAIRS

DEANS

Robert S. Brown

College of Aeronautical Studies. B.S., M.S., Lowell Technical University; Ph.D., University of Connecticut.

Paul S. Daly

College of Aviation Technology. B.S., Engineering Science, Naval Postgraduate School, Monterey, California; M.B.A., University of West Florida; C-ASMEL-I.

William J. Meehan*

College of Continuing Education. B.G.S., University of Nebraska; Ed.D., Oklahoma State University; C-ASMEL-I; H.

Thomas L. Wilson*

Program Support. B.S., University of Maryland; M.Ed., University of Pittsburgh; C, ASEL-I.

ASSOCIATE DEANS

Anton DiGirolamo

College of Aviation Technology, Associate Professor B.S., University of Nebraska; M.Ed., Rollins College; Ed.D., Nova University; BGI; IGI; P-ASEL, Teachers Certificate.

Russell R. Lewis*

Military Support Programs, Europe. B.B.A., University of Cincinnati; M.B.A., Xavier University; ATP; ASMEL-I; CFI-ASME; AGI; IGI Gold Seal.

William L. March*

Graduate Programs, Europe. B.A., Indiana University; M.A., University of Chicago; Ed.D., Indiana University.

Pamela T. Myers

Academic Affairs. B.S., University of Nebraska; M.S., University of Utah.

R. Bruce Morrin*

Graduate Studies, Daytona Beach. B.S., U.S. Naval Academy; M.S., George Washington University; M.A., Colgate University; BGI.

Howard S. Sellinger*

Graduate Programs, Miami. B.S., LeMoyne College; M.S., Niagara University.

ASSISTANT DEANS

John J. Gorman*

Pacific. B.S., U.S. Military Academy; M.A., Georgetown University; M.B.A., Pepperdine University; C-ASMEL-I.

John A. Johnston*

South Central United States. B.A., Ohio State University; M.S., University of Arizona; C-ASMEL-I; CFI.

William A. Maloney, Sr.*

South Atlantic. B.S., Fayetteville State University; M.Ed., North Carolina State University; C-ASEL-I.

Thomas W. Pettit*

Military Support Programs, U.S.: B.S., Embry-Riddle Aeronautical University; M.S., Ed.S., Troy State University; C-ASMEL-H-I.

Jack H. Thompson*

Middle Atlantic. B.S., University of Maryland; M.Ed., College of William and Mary; C-ASMEL-I.

DIRECTORS

Santo A. Iriandit

Academic Affairs. B.S.E. (Aero), University of Michigan; B.S.E. (Communications), U.S. Naval Postgraduate School; M.B.A., Nova University; ATP-ASMEL; CFI and A&I.

Harold Klingman*

Undergraduate Programs, Europe. B.A., Hardin-Simmons University; M.A., Boston University; C-ASEL.

RESIDENT CENTER DIRECTORS*

Herschel H. Boydston

Whidbey Island. B.S. and M.A., Oregon State University.

John J. Gorman

Hawaii. B.S., U.S. Military Academy; M.A., Georgetown University; M.B.A., Pepperdine University; C-ASMEL-I.

Frederick M. Groenke

Williams Air Force Base. B.S., Arizona State University.

J. L. Jackson

Fort Ord. B.A. and M.A., Chapman College.

John A. Johnston

Fort Rucker. B.A., Ohio State University; M.S., University of Arizona; C-ASMEL-I; CFI.

A. Dean Kirby

Corpus Christi. B.S., University of California; M.B.A., Georgia Southern University; C-ASMEL-I.

Robert E. Lowell

Norton Air Force Base and March Air Force Base. B.S., U.S. Naval Academy; M.B.A., University of Southern California.

John D. McCurdy

Fort Campbell. B.S., Embry-Riddle Aeronautical University; CFI-ASMEL; H.

Charles P. Miller

Northern California. B.A., University of Maryland; M.S., Troy State University.

Lawrence L. Mowery

Fort Benning. B.A., University of Georgia; M.A., George Washington University.

Robert R. Piragowski

Fort Bragg. B.G.E., University of Omaha, M.Ed., North Carolina State University.

James Smith

Keesler Air Force Base. B.A., Pepperdine University; graduate, Air University (England); P-ASEL; C (USAF).

Wendell R. Stockton

Nellis Air Force Base. B.A., Park College.

Roberta R. Strong

Norfolk Naval Station.

Gerson J. Subtoky

Fort Knox. B.S., Western Kentucky University; M.P.S., Western Kentucky University.

Jack H. Thompson

Virginia. B.S., University of Maryland; M.Ed., College of William and Mary; C-ASMEL-I.

John J. Walsh, Jr.

Hunter Army Airfield. B.S., University of Georgia; M.A. and M.S., George Washington University.

AREA COORDINATORS*

James B. Bolton

Technical Program Coordinator. A.A., Orange Coast College; A&P.

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S	Seaplane
AD	Aircraft Dispatcher
IA	Inspection Authorization
ME	Multi-Engine
SE	Single-Engine
A&P	Airframe and Powerplant Mechanic
AGI	Advanced Ground Instructor
ATP	Airline Transport Pilot
BGI	Basic Ground Instructor
CFI	Certified Flight Instructor
CTO	Control Tower Operations
DME	Designated Mechanics Examiner
DWE	Designated Written Examiner
HTA	Heavier Than Air
IGI	Instrument Ground Instructor
LTA	Lighter Than Air
SME	Single and Multi Engine
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