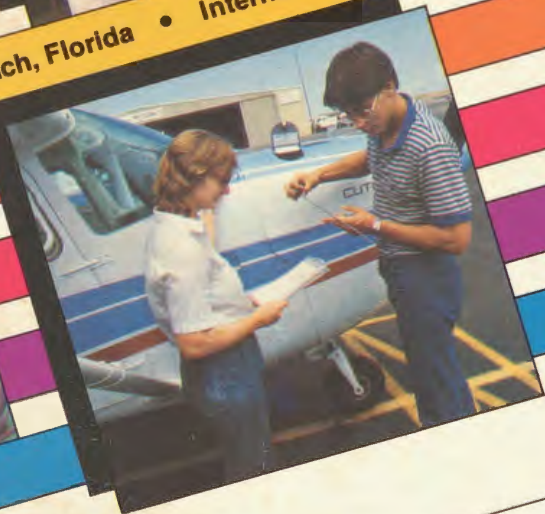


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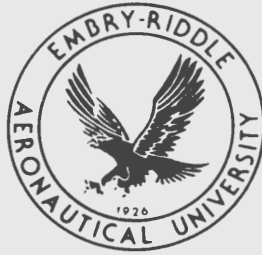


Prescott, Arizona • Daytona Beach, Florida • International Campus



Personal Copy Of \_\_\_\_\_





# Embry-Riddle Aeronautical University

Serving the world of aviation through  
higher education for more than 50 years

## EXECUTIVE OFFICES

Embry-Riddle Aeronautical  
University  
Star Route Box 540  
Bunnell, FL 32010  
1-800-874-9912

## WESTERN U.S. CAMPUS

Embry-Riddle Aeronautical  
University  
3200 N. Willow Creek Road  
Prescott, AZ 86301  
(602) 778-4130

## EASTERN U.S. CAMPUS

Embry-Riddle Aeronautical  
University  
Regional Airport  
Daytona Beach, FL 32014  
(904) 252-5561

## INTERNATIONAL CAMPUS

Embry-Riddle Aeronautical  
University  
Star Route Box 540  
Bunnell, FL 32010  
(904) 673-3180

## In Europe contact:

### HQ USAFE/DPPEF

Embry-Riddle Aeronautical University  
APO New York 09633  
Telephone Number —  
Wiesbaden Civilian: 06121-810608  
Wiesbaden Military: 3723

# Table of Contents

E-RAU Calendar 1984-85.....	5
<b>General Information</b> .....	7
Message from the President .....	6
Purpose of the University.....	7
History of Embry-Riddle.....	7
Accreditations and Affiliations .....	8
Foreign Students.....	9
<b>Admission to the University</b> .....	10
General Procedures.....	10
Procedures for Foreign Students.....	11
Transfer Student Procedures .....	12
Transfer Credit .....	12
Advanced Standing .....	13
Course Equivalency Examination .....	17
Veterans .....	17
Degree Completion Program/ Active Duty Military Personnel .....	18
SAT/ACT .....	18
Basic Skills Requirement.....	18
Registration for Handicapped Students.....	19
<b>Guide to the Curriculum</b> .....	20
Career — Academic Program Locator .....	20
Degree Programs.....	22
Areas of Concentration .....	23
Basic Skills Requirement.....	24
General Education Requirements .....	25
Aeronautical Engineering Program.....	25
Aircraft Engineering Technology Programs .....	26
Computer Science Programs.....	26
Maintenance Technology Programs.....	26
Management Programs .....	28
Flight Programs.....	28
Graduate Programs .....	29
Air Traffic Control .....	29
Cooperative Education .....	30
Reserve Officer Training .....	30
Aviation Education Design Department.....	34
<b>Degree Programs</b> .....	35
Aeronautical Engineering Program.....	35
Aeronautical Engineering.....	35
Aircraft Engineering Technology.....	37
Aviation Computer Programs .....	40
Aviation Computer Programming.....	40
Computer Science with Aviation Applications.....	41
Aviation Maintenance Programs .....	43
Aircraft Maintenance.....	43
Aviation Maintenance Technology .....	44

Aviation Technology .....	45
Avionics Maintenance Technology .....	48
Aviation Management Programs .....	50
Aviation Administration .....	50
Aviation Maintenance Management .....	52
Aviation Management .....	56
General Aeronautics .....	59
Professional Aeronautics .....	60
Flight Programs .....	65
Aeronautical Science .....	65
Aircraft Dispatcher Certification .....	67
Aeronautical Studies .....	68
Aviation Safety .....	77
<b>Course Descriptions .....</b>	<b>79</b>
AE Aeronautical Engineering .....	80
AF Air Force Aerospace Studies .....	82
AMT Aviation Maintenance Technology .....	83
AS Aeronautical Science .....	87
AV Avionics Technology .....	90
CE Cooperative Education .....	91
CS Computer Science .....	91
EC Economics .....	96
EL Electronics Technology .....	97
ES Engineering Science .....	98
ET Engineering Technology .....	101
FA Flight Academic .....	103
HU Humanities .....	105
MA Mathematics .....	107
MS Management Science .....	110
MY Military Science Army ROTC .....	114
PS Physical Science .....	115
SF Safety of Flight .....	117
SS Social Science .....	119
<b>Academic Regulations and Procedures .....</b>	<b>121</b>
<b>Student Services and Activities .....</b>	<b>133</b>
Activities .....	133
Services .....	136
<b>Financial Information .....</b>	<b>142</b>
Tuition .....	142
Required Advance Deposits .....	142
Fees .....	142
Payment Procedure .....	144
Estimated Expenses Per Trimester .....	144
Refundable Fees and Charges .....	145
Refund Policy .....	145
Delinquent Accounts .....	146
<b>Financial Assistance .....</b>	<b>147</b>
Financial Aid Information .....	147
Grants .....	148
Loans .....	148

Employment .....	148
Scholarships.....	149
<b>University Campuses .....</b>	<b>152</b>
Daytona Beach Campus.....	152
International Campus.....	154
Prescott Campus.....	156
Executive Offices.....	157
<b>Faculty and Administration .....</b>	<b>158</b>
Officers of the University .....	158
Deans .....	159
Faculty .....	162
Academic Support.....	178
Student Affairs .....	179
Administration.....	179
Board of Trustees.....	182
International Advisory Council.....	185
Boards of Visitors .....	186
Industrial Advisory Committees.....	188
<b>Index .....</b>	<b>192</b>

# \*E-RAU CALENDAR 1984-85

## FALL TRIMESTER 1984

August 29-31 .....	Registration
September 3 .....	Classes begin
September 5 .....	Last day for late registration
November 22-23 .....	HOLIDAY — Thanksgiving
December 6 .....	Last day of classes
December 8, 10-13 .....	Final Examinations
December 15 .....	Commencement

## SPRING TRIMESTER 1985

January 3-4 .....	Registration
January 7 .....	Classes begin
January 9 .....	Last day for late registration
February 18 .....	HOLIDAY — President's Day
April 5 .....	HOLIDAY — Good Friday
April 11 .....	Last day of classes
April 13, 15-18 .....	Final Examinations
April 20 .....	Commencement

## SUMMER TRIMESTER (TERM A) 1985

April 30-May 1 .....	Registration for Term A, B
May 2 .....	Classes begin
May 6 .....	Last day for late registration
May 27 .....	HOLIDAY — Memorial Day
June 18 .....	Last day of classes
June 20-21 .....	Final Examinations

## SUMMER TRIMESTER (TERM B) 1985

June 25 .....	Registration for Term B
June 26 .....	Classes begin
June 28 .....	Last day for late registration
July 4 .....	HOLIDAY — Independence Day
August 12 .....	Last day of classes
August 14-15 .....	Final Examinations
August 17 .....	Commencement

\* Daytona Beach and Prescott Campuses only. International Campus students should contact the local E-RAU Resident Center Director for the Academic Calendar applicable to their specific location.

## Orientation

Orientation programs for all new students are planned and scheduled by each campus, and are conducted before registration each trimester. A special orientation program for new foreign students is held prior to the general orientation required for all new students. New students will receive specific information regarding the date, time, and place of orientation activities for their campus from Admissions approximately one month in advance. Faculty and staff should contact their campus Registration and Records Office for specific orientation dates.

## A MESSAGE FROM THE PRESIDENT

You should be commended for your insight in considering aviation as your career field. Industry analysts agree that aviation is the career of the '80s — and beyond. As aviation leads the way for industry into the high tech era, Embry-Riddle has earned a position of leadership in aviation higher education.

If your application to Embry-Riddle is accepted, you will begin a journey limited only by your motivation and self-discipline. You'll have to earn your degree yourself. No one will be able to do it for you. You'll have to look at the rewards available in aviation and decide they're worth considerable effort.

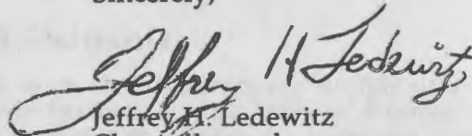
Once enrolled, don't be afraid to get involved in activities outside the classroom. Get involved with Student Government, clubs, sports and community efforts. Each contact will broaden your vision, increase your understanding of our society, and make you a more complete person. After all, a university education should be more than academic; it should be a life experience that changes you forever — molds you into the person that you want to be.

To become educated you have to be flexible. Flexibility is crucial to getting the most from a university education. Use this time to try new techniques, ask new questions, and look at things in a different light.

Whether your goal is to become a professional pilot, an airport manager, an airframe and powerplant mechanic, an aeronautical engineer or an avionics technician, strive for the level of excellence that has brought aviation from the Wright brothers' bicycle shop to the gigantic facilities of Lockheed, McDonnell Douglas, and Gates Learjet. The commercial, general, and military segments of aviation are always on the lookout for sharp, young men and women. Those with the dedication, imagination, and specialized education to PRODUCE from the start will have the best chance at getting the jobs that are out there. Buckle down and you could be one of them.

If you are accepted by Embry-Riddle, we will do all we can to help you; but whether you succeed or fail will be up to you! Good luck in your studies.

Sincerely,



Jeffrey H. Ledewitz  
Chancellor and  
Interim President



# General Information

## Purpose of the University

The purpose of Embry-Riddle Aeronautical University is to provide an aeronautically oriented educational program of such fundamental background, scope and excellence that students may achieve competency and proficiency for productive careers, and in doing so, develop character, judgement, breadth of view and understanding of our social and economic systems.

## History of Embry-Riddle

Since its beginning, Embry-Riddle Aeronautical University has played a unique and important role in aviation. Two years before Charles Lindbergh made his historic flight, John Paul Riddle bought two Waco biplanes and opened a flying service. Soon after, he met T. Higbee Embry, a prominent Cincinnati businessman who shared Riddle's passion for flight. Embry contributed some badly needed funding to the operation and went into partnership with Riddle. The Embry-Riddle Company was born May 19, 1926 at Lunken Airport in Cincinnati.

Despite Embry's strong financial backing, the company still faced a number of problems. There was the constant need — and constant shortage — of everything from hangar space to spare parts. Even trained mechanics to repair the Wacos and pilots to fly them safely were in short supply. It was this particular need that later would play an important part in setting a new direction of growth for the Embry-Riddle Company.

The original company remained intact until late 1928, when it was sold to become the first unit of what is now American Airlines.

In 1932 Riddle resigned from American Airlines and moved to Miami, Florida. Aviation education still occupied his mind, and he was convinced that he had a better way to develop it. The company's original name was retained, and Embry-Riddle's first Florida-based home was established along Miami's causeway.

In the late 1930's, Riddle and his new partner, John G. McKay, expanded Embry-Riddle to become the world's largest aviation school. The company operated flight training centers at Florida's Carlstrom, Dorr and Chapman Airfields, Miami's Riddle-McKay Aero College, and the Riddle-McKay Institute in Tennessee, as well as other facilities.

As war approached, allied nations sent thousands of fledgling airmen to Miami to become pilots, mechanics and aviation technicians of all kinds. According to best estimates, somewhere near 50,000 aviation candidates were trained by Embry-Riddle during the war years.

In 1944 Embry-Riddle's curriculum was expanded again, and the onetime flight school became the Embry-Riddle International School of Aviation. Shortly thereafter, it developed an even stronger academic orientation and was redesignated as the Embry-Riddle Aeronautical Institute.

In 1962 the Institute hired Jack Hunt, an aviation consultant, as its business advisor. Hunt reorganized Embry-Riddle as a non-profit institution, planned for further expansion and development, and found a new location — one that offered room for growth. Trimming an initial list of more than 30 Florida locations, Hunt settled on Daytona Beach as the first choice.

On April 24, 1965, a convoy of 30 trucks rolled into the Daytona Beach Airport. On board was everything the Institute owned, from student desks to engine displays. Two-hundred thirty-nine students, a staff of about 75, and a collection of rented buildings at the Regional Airport were what Embry-Riddle consisted of when it began its first classes at Daytona Beach.

Shortly after the relocation, Embry-Riddle acquired an 86-acre land tract at the airport. That location has become Embry-Riddle's Eastern Campus. In 1970 Embry-Riddle became a university, and the name was changed to the one known today.

Resident Centers were established by the University at four United States military aviation centers in 1970. The Centers were established in response to requests from military officials that the University offer its programs at selected locations in order to serve the educational needs of active duty military personnel.

In 1978 Embry-Riddle introduced its Western Campus in Prescott, Az. This campus is situated on 510 acres and boasts of superb flying weather, making this an outstanding educational facility.

Embry-Riddle offers three master's level programs at many locations worldwide and has approximately 80 resident centers throughout the world. This global network comprises the International Campus of over 3,000 students.

Career opportunities in national and international sectors continue to multiply. Embry-Riddle will continue to provide the technically and academically trained personnel needed for the future.

## **Accreditations and Affiliations**

Embry-Riddle Aeronautical University is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools. The Bachelor's Degree program in Aeronautical Engineering at the Daytona Beach Campus is accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). The Bachelor's Degree program in Aircraft Engineering Technology is accredited by the Technology Accreditation Commission (TAC) of ABET. 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 Embry-Riddle 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 achieve graduate status in the year accreditation is granted. The University anticipates no difficulty in obtaining ABET approval.

Federal Aviation Administration (FAA) approved certification programs include Maintenance Technology (Airframe and Powerplant) and Flight (Private, Commercial, Instrument, Multi-Engine, Flight Instructor and Instrument Flight Instructor ratings). Additionally, a number of the University's degree programs have recently been identified by the FAA as meeting the criteria of the model Airway Science Curriculum which was developed by the FAA in conjunction with the University Aviation Association. This recognition provides additional career opportunities for Embry-Riddle graduates.

Embry-Riddle is also a member institution of the four-year Service Members 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 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 Registrars at the resident centers or write the International Campus Director of Records and Registration, Embry-Riddle Aeronautical University, Star Route Box 540, Bunnell, FL 32010.

## Foreign Students

Embry-Riddle is truly an international university. Students from many countries attend E-RAU classes. The foreign students comprise approximately one-tenth 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 foreign students is a valuable experience for all.

# Admission To The University

## GENERAL PROCEDURES

To apply for admission to programs at the Daytona Beach or Prescott Campus, send the below listed items to:

Department of Admissions  
Embry-Riddle Aeronautical University  
Star Route, Box 540  
Bunnell, Florida 32010

1. Completed application form and \$25 application fee as early as possible but not later than 60 days\* prior to desired enrollment date;
2. Official copy of high school academic records (must be sent directly to Embry-Riddle by the high school),  
OR  
General Education Development Test score, (composite average score of 45 or higher and a minimum score of 40 on each of the subject tests is required. Scores must be sent directly by the testing agency);
3. \*\*ACT or SAT scores (must be sent directly to Embry-Riddle by the testing agency or included on the official high school transcript);
4. FAA Medical Certificate, Class I or II, at least 60 days prior to desired enrollment date (only required of flight students).

\* Applications and other documents required for admission received fewer than 60 days prior to the desired enrollment date will be processed but students can expect delays in date of admission and enrollment.

\*\* Not required for foreign students.

**THESE ITEMS MUST BE RECEIVED BEFORE THE UNIVERSITY CAN COMPLETELY PROCESS THE APPLICATION.**

Once the student receives the "Accepted For Admission" letter, the student must submit a \$150 advance tuition deposit to the Department of Admissions within 30 days in order to confirm the admission, at which time a "Confirmed for Admission" letter will be sent. The advance tuition deposit is refundable, provided the prospective student notifies the Department of Admissions in writing of his intention not to enroll at least sixty days before the first day of registration for the trimester.

If the prospective student misses the deadline for the advance tuition deposit refund, the deposit is held in his account for one

year should he decide to come to the University during that period. After one year, the deposit is permanently forfeited.

A prospective student who cancels his application at any point in the admission process may reactivate the application at no additional charge during the one year period following the initial entry term selected. Prospective student files are held by the Department of Admissions for one year following the date of the selected entry term. After one year, a new application, fee, and supporting documents must be submitted.

To apply for admission to International Campus locations:

- Contact the E-RAU representative at the nearest resident center.

- Independent Studies Program, contact:

Director  
Center for Independent Studies  
International Campus  
Embry-Riddle Aeronautical University  
Star Route, Box 540  
Bunnell, Florida 32010  
(904) 673-3180, Ext. 204

## **PROCEDURES FOR FOREIGN STUDENTS\***

To apply for admission to programs at Daytona Beach or Prescott Campus, send the below-listed items to:

Department of Admissions  
Embry-Riddle Aeronautical University  
Star Route, Box 540  
Bunnell, Florida 32010

1. Completed E-RAU application for admission and \$50 application fee at least 180 days prior to desired enrollment date;
2. A detailed evaluation of secondary school and college transcripts, if applicable, by Educational Credentials Evaluators, Inc., PO Box 17499, Milwaukee, WI 53217; (This agency charges a fee for this service)
3. A Test of English as a Foreign Language (TOEFL) minimum score of 500, or Michigan Test of English Language Proficiency (MTELP) minimum score of 85 is required of all students for whom English is a second language. The MTELP must be administered by an E-RAU Resident Center or U.S. educational institution in order to be accepted in lieu of the TOEFL. Results must be sent directly to Embry-Riddle by the testing agency.
4. A bank letter, affidavit of financial support or scholarship letter.

**THE ABOVE ITEMS MUST BE RECEIVED BEFORE THE UNIVERSITY CAN FULLY EVALUATE THE APPLICATION.**

Once approved, the prospective foreign student must:

1. Submit an advance deposit to the Department of Admissions (See Financial Information section). Upon receipt, the University will send a letter confirming enrollment and issue Form I-20: Certificate of Eligibility.
2. Present Certificate of Eligibility to U.S. Embassy or Consulate to obtain visa for entry into the United States. (The I-20 must be in the student's possession prior to departure from home country. Also, a change of U.S. immigration status from tourist visa (or other) is not possible after the student's arrival at the University).

**NOTE:** Embry-Riddle is authorized under Federal law to enroll non-immigrant alien students.

\*Refers to non-resident, non-immigrant students on a United States F-1 or J-1 Visa.

## **TRANSFER STUDENT PROCEDURES**

Transfer students are those who have attained academic credit from an institution of higher education.

To apply for admission as a transfer student, all items listed under General Procedures must be provided, plus the following additional items:

1. Official transcripts from all other previously attended institutions of higher education (transcripts must be sent to E-RAU directly from the institution).
2. Upon request only, the catalog(s) from each such institution with the descriptions of courses satisfactorily completed marked therein.

## **TRANSFER CREDIT**

1. Transfer credit may be granted under the following conditions:
  - (a) Only courses completed with a grade of C or better are transferable.
  - (b) Grades are not transferable.
  - (c) Previous flight experience may be accepted in accordance with the E-RAU policy as stated in the Advanced Standing section of this Chapter.
  - (d) Credit was earned at collegiate institutions which are accredited by the appropriate regional accrediting agency. For non-accredited institutions, E-RAU will generally follow the guidance in the current "Transfer Credit Practices of Selected Educational Institutions", published by the American Association of Collegiate Registrars and Admissions Officers.
  - (e) Embry-Riddle evaluates previous academic credit on a course- by-course basis. 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. Students who have been granted credit for the first level English and mathematics courses appropriate to their degree are exempt from placement testing requirements. All other students, except those who are exempted on the basis of their ACT or SAT scores, will be required to take the examinations described under Basic Skills Requirement and will be subject to E-RAU regulations governing these tests.
3. Students on probation at the last institution attended will be placed on probation when enrolled. They must earn a grade point average of at least 2.0 the first trimester or be subject to possible dismissal.
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 University Standards in effect at the time of his enrollment and registration on campus or at a resident center as a degree candidate. At that time, the student will be advised by the University of the status of his credit transfer.

## ADVANCED STANDING

Normally, all documentation of course work, military experience, credit by examination, and any FAA licenses should be submitted for evaluation along with the formal application for admission to the University.

At the Daytona Beach and Prescott Campuses, all academic evaluations for advanced standing will be completed *prior to the end of the student's first trimester* of attendance at or readmission to the University. Formal application for advanced standing for flight training must be made prior to the end of the student's first trimester of attendance at the Daytona Beach or Prescott Campus. International Campus students should submit this documentation with their applications for admission as degree seeking candidates. The affected student will be provided a copy of the completed official evaluation and given 30 days (International Campus: 60 days) to question the credit awarded.

Advanced standing and transfer credit, granted in accordance with these procedures, will be authenticated by the Admissions Office and maintained by the Campus Records Office for official

records purposes. An evaluation form will be provided to the student.

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 official College Entrance Examination Board (CEEB) Advanced Placement Test scores of 5, 4 or 3 on any examination, and 2 or better on the Calculus examinations.
2. Embry-Riddle follows the standards recommended by the American Council on Education for awarding credit for the College Level Examination Program (CLEP) General examinations. Scores on these tests must be submitted prior to initial enrollment as a degree candidate to be officially evaluated for credit. The disciplines and hours of credit recognized by Embry-Riddle for these examinations are as follows:

Communications	6 credit hours
Humanities	6 credit hours
Social Sciences	6 credit hours
Natural Sciences	6 credit hours
Mathematics	6 credit hours

3. The University has approved certain CLEP subject examinations, Defense Activity for Non-Traditional Educational Support (DANTES) examinations, and American College Testing program proficiency examinations (ACT PEP) for award of credit as applicable to the student's program. Scores on these examinations must be submitted prior to initial enrollment as a degree candidate to be officially evaluated for credit. Credit for these examinations may not be applied toward the last 30 credit hours required for a baccalaureate or the last 12 credit hours required for an associate degree. International Campus students may apply credit for approved examinations subsequent to their enrollment when advance authorization is granted by their Center or Area Director.
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 certain 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 documentation to substantiate his background to the appropriate Embry-Riddle authority *during his first trimester at the University*. If the student has attended an FAA approved flight school, a transcript of all flight training, signed by the school's Chief Instructor, must be provided.

Credit granted on the basis of FAA certificates and licenses (other than maintenance technician), FAA written examinations, and Flight Department 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-Airplane, he will be eligible for advanced standing after completing all remaining flight courses leading to the Commercial Pilot certificate with Instrument and Single-Engine ratings. Credit for the multi-engine flight course will be awarded only if the applicant possesses a multi-engine airplane class rating, a graduation certificate from an FAA approved course of training for the multi-engine rating, and passes an oral examination on multi-engine operations. Full credit will normally be awarded for flight courses when all of the above stipulations are satisfied. Any credit differences between the amount awarded and the credit value assigned to the E-RAU courses are to be made up in 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.

Credit for the aforementioned experience will be granted as follows:

- (a) Possession of an FAA Private Pilot Certificate, or satisfactory completion of an FAA approved Private Pilot Ground School, or satisfactory completion of the Private Pilot (or higher) written examination and a minimum of 40 hours of pilot experience: AS 100.
- (b) Possession of an FAA Commercial Pilot Certificate, or 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 the student has a Rotorcraft Helicopter Standard Instrument Rating or has successfully completed the FAA Instrument written examination, he or she may also be credited with AS 202.
- (c) Possession of an FAA Instrument Rating, or satisfactory completion of an FAA approved instrument Ground School, or satisfactory completion of the FAA Instru-

ment 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) Possession of an FAA Certificate for Helicopter Instructor: One (1) credit for FA 499, Special Topics in Flight.
7. International Campus students holding FAA Maintenance Certificates at the time of admission to a degree program are eligible for advanced standing in the E-RAU Type 65 Aviation Maintenance Technology program (See the Guide to the Curriculum section for description of the Type 65 program) and may receive credit for courses as follows, depending upon the ratings possessed:

Students holding FAA Maintenance Certificates with the Airframe rating may receive credit for AMT 200, 270 and 370 for a total of 12 credits.

Students holding FAA Maintenance Certificates with the Powerplant rating may receive credit for AMT 200, 280 and 380 for a total of 12 credits.

Students holding FAA Maintenance Certificates with both the Airframe and Powerplant ratings may receive credit for AMT 200, 270, 280, 370, and 380 for a total of 20 credits.

Enrolled students who have a minimum of 18 months on-the-job experience subsequent to technical training in an approved aircraft maintenance specialty may, after completion of all required AMT course work, receive credit for:

AMT 355 — Aircraft Maintenance Practicum (8 credit hours).

Enrolled students who are qualified for the award of AMT 355 credit and have a minimum of 30 months on-the-job experience subsequent to technical training in an approved aircraft maintenance specialty may, after completion of all required AMT course work receive credit for:

AMT 355 — Aircraft Maintenance Practicum (8 credit hours)

and

AMT 455 — Advanced Aircraft Maintenance Practicum (8 credit hours).

Students lacking on-the-job experience will fulfill the credit hour requirements with electives selected from the AMT/AS/AV/CS/EL/FA/MS academic disciplines.

8. Other degree programs for which holders of the FAA A&P Certificate may receive advanced standing are Aircraft Engineering Technology, Aircraft Maintenance, Aviation Technology, Aviation Maintenance Management, Professional Aeronautics, and Aeronautical Studies with an area of concentration in AMT. Thirty-six hours of academic credit will be granted for possession of the A&P Certificate.
9. Holders of the FCC 1st Class Radiotelephone Operator's License, the FCC 2nd Class Radiotelephone Operator's License, or the FCC General Radiotelephone Operator's License may be granted advanced standing credit for EL 207 Basic Radiotelephone Equipment Theory and Operation.
10. Advanced standing information on the Professional Aeronautics degree is contained in the description of that degree in the Degree Programs Chapter.

## **COURSE EQUIVALENCY EXAMINATION**

A student who possesses qualifications not listed above and who considers that his or her background warrants consideration for advance standing may submit appropriate evidence of experience for evaluation, or the student may request administration of a course equivalency examination for specific courses. Flight experience will be evaluated in accordance with procedures outlined in the Advanced Standing section of this Chapter.

Applications to take course equivalency examinations are to be filed at the Campus Records Office or Resident Center. A non-refundable \$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.

## **VETERANS**

All E-RAU degree 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' Administration benefits at Embry-Riddle should contact the campus Veterans' Affairs Office for information and appropriate application. Admissions procedures for veterans are the same as those for other students.

- A. Degree students (regardless of college or program) at Daytona Beach or Prescott Campus receiving VA educational benefits will lose educational benefits when repeating courses if the total number of new course registrations is less than 12 credit hours per full trimester (six credits per 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 resident center representative for information regarding VA benefits.
- C. All VA supported students, regardless of program, should read the following carefully:

Title 38, United States Code, sections 1674 and 1724, requires that educational assistance benefits to veterans and other eligible persons be discontinued when the student ceases to make satisfactory progress toward completion of his or her training objective.

Veterans' progress will be measured solely according to University standards, as published in this Catalog.

### **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 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 of all students (except Foreign students).

Since these tests are given several times a year on a nationwide basis, the student *must* take the test before arriving on the Prescott or Daytona Beach Campuses. Students should contact their high school guidance counselor or principal to determine the location of the nearest testing center. When a student registers for the test, he or she should indicate in the proper space that a transcript of the scores should be sent to Embry-Riddle.

The SAT and ACT test scores are used for placement purposes only.

### **BASIC SKILLS REQUIREMENT**

Embry-Riddle recognizes the importance of communications and related skills in all areas of aviation and requires all of its new

students to demonstrate proficiency in the areas of expressive and receptive communications and quantitative skills. This is accomplished by passing the three basic skills placement tests, making qualifying scores on SAT or ACT tests, or transferring credit for first level English and Mathematics courses. For further information see the Basic Skills Requirement section of the Guide to the Curriculum Chapter.

## **REGISTRATION FOR HANDICAPPED STUDENTS**

Early registration for handicapped students may be arranged through the Department of Admissions. 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.

# 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. The Career-Academic Program Locator, listed below, relates the student's desired career goals 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 are open to E-RAU Computer Programming graduates.

#### Academic Programs – Computers

- Aeronautical Studies Program  
Computer Science Area
- Aviation Computer Programming Program
- Computer Science with Aviation Applications

### Engineering and Technology Careers in Aviation

Technical and supervisory positions within the aviation industry include research; development; test and evaluation; design; analysis; production; quality control; product support; manufacturing; maintenance and modification; project and program management; inspection and safety; technical coordination and liaison; customer services. Principal employers are military and commercial aircraft and powerplant manufacturers; general aviation manufacturers;

missile and space system manufacturers; airlines; government aerospace laboratories.

### **Academic Programs**

- Aeronautical Engineering Program
- Aircraft Engineering Technology Program

## **Flight Careers**

Flight programs prepare graduates for 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.

### **Academic Programs – Flight**

- Aeronautical Science Program
- Aeronautical Studies Program  
Flight Area
- Aviation Technology Program  
Flight Option
- Professional Aeronautics Program  
Flight Areas

### **Certification Programs**

- Aircraft Dispatcher Program

## **Maintenance Careers in Aviation**

Maintenance programs prepare graduates for 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  
Aviation 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
  - Professional Aeronautics Program
- Aviation Maintenance Areas

## Management Careers in Aviation

Management program graduates are prepared for 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 Science Area
- Aviation Administration Program
- Aviation Maintenance Management Program
- Aviation Management Program
- Professional Aeronautics Program

## DEGREE PROGRAMS

The University offers the following degree programs:

### Bachelor of Science

Aeronautical Engineering #  
 Aircraft Engineering Technology †  
 Aeronautical Science  
 Aeronautical Studies  
 Aviation Administration  
 Computer Science with Aviation Applications +  
 Aviation Maintenance Management +  
 Aviation Management  
 Aviation Technology +



## **Bachelor**

Professional Aeronautics

## **Associate in Science**

Aeronautical Science  
Aeronautical Studies  
Aircraft Engineering Technology †  
Aircraft Maintenance +  
Aviation Computer Programming  
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 \*

\* Available at International Campus Locations only.

+ Not available at the Prescott Campus.

† Available Daytona Beach Campus Only.

# Not available at International Campus Locations.

Unless otherwise indicated, all degree programs are available at all University campuses. Students should review the various options and select the program which best meets their career objectives.

## **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 a large part by the Area of Concentration selected by the student from those mentioned in the various degree programs. The following are offered:

Air Force Aerospace Studies (Air Force Reserve Officers Training Program)  
Air Traffic Control  
Air Transportation Management  
Airport Management  
Aviation Maintenance Technology

Avionics  
Computer Science  
Engineering Science  
Flight  
Management  
Military Science (Army Reserve Officers Training Program)  
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.

## BASIC SKILLS REQUIREMENT

Embry-Riddle recognizes the importance of communications and related skills in all areas of aviation. Successful pilots, airport managers, aviation maintenance technicians or other aviation professionals must possess these skills in order to do their jobs effectively. Because of this, Embry-Riddle requires all of its students to demonstrate proficiency in the areas of expressive and receptive communications and quantitative skills. Proficiency may be demonstrated either by passing the Basic Skills Placement tests, making qualifying scores on SAT or ACT tests, or transferring credit for first level English and Mathematics courses. If proficiency is not demonstrated as stated above, students must enroll in the Basic Skills Courses described below.

The Receptive Communications Skills course (HU 116) 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) helps to prepare students for the introductory mathematics courses in the various curricula such as MA 111, MA 120 and MA 140.

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 University placement tests before they will be permitted to complete their registrations. Some students may exempt these basic skills courses based on their ACT or SAT scores.

Students for whom English is a second language must demonstrate advanced English proficiency and achieve a satisfactory score on the Michigan Test of English Language Proficiency (MTELP). Those students who do not demonstrate advanced English proficiency on the MTELP 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.

Students who demonstrate satisfactory performance on the MTELP must follow the normal procedure for orientation, which includes taking the University's math placement exam.

NOTE: The Basic Skills courses do not apply toward minimum degree requirements. These courses are provided to assist the students' transition to first level curriculum courses.

## GENERAL EDUCATION REQUIREMENTS

Embry-Riddle's baccalaureate programs are intended to provide (1) sufficient specialization for the student to enter the aviation field; (2) sufficient general management and/or technical training for the student to advance in his chosen career field; (3) sufficient general education background for the student to lead a meaningful, responsible life in a complex democratic society; and (4) sufficient communications background to give, receive, or exchange information effectively.

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
Communicative Skills	6
Technical Report Writing	3
Other Humanities/Social Sciences	6
Mathematics	6
Physical Science	6
Economics	3
Computer Science	3

## AERONAUTICAL ENGINEERING

Embry-Riddle offers the Bachelor of Science degree in Aeronautical Engineering at the Daytona Beach and Prescott campuses.

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.

## **AIRCRAFT ENGINEERING TECHNOLOGY PROGRAMS**

The Aircraft Engineering Technology programs at the Daytona Beach campus are designed to provide the aerospace industry with graduates trained to fill support and liaison roles related to aeronautical engineering activities. The course work concentrates on the application of scientific and engineering principles. Depending on the program, completion of the E-RAU Type 147 Aviation Maintenance Technology Program may be required for the degree.

## **COMPUTER SCIENCE PROGRAMS**

In recognition of the rapidly expanding usage of computer technology in the aviation industry, Computer Science degree programs are offered to prepare students for careers as computer specialists. The Bachelor of Science in Computer Science with Aviation Applications consists of a solid foundation in general education requirements (Mathematics, Physical and Social Sciences and Humanities), a core curriculum in Computer Science subjects, and sufficient electives for each student to develop an individual area of specialization.

An Associate in Science Degree in Aviation Computer Programming is also available. It prepares the student for a career as a computer programmer, emphasizing mastery of various languages and the underlying concepts of computing.

## **AVIATION MAINTENANCE TECHNOLOGY PROGRAMS**

Embry-Riddle has been training aviation maintenance technicians since 1926. The Aviation Maintenance Technology (AMT) Division moved into the new Samuel Goldman Aviation Maintenance Technology 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, the Associate in Science in Aircraft Maintenance, 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.

Avionics Maintenance Technology training may be taken as an integral part of the A.S. Degree in Avionics Maintenance Technology. In addition, the Avionics program may be taken as an Area of

Concentration in other selected degree programs. The B.S. in Aviation Technology Degree combines AMT and Avionics Maintenance when the student elects to take the Avionics Area of Concentration.

## **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. AMT degree programs are not available at the Prescott Campus.

Type 147: This program, offered only 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 65: Embry-Riddle offers special AMT courses to students on the International Campus who are experienced but unlicensed aircraft maintenance specialists. These courses deal largely with the theory and concepts of all aspects of airframe and powerplant maintenance and with the problems, considerations and practices involved in maintaining an aircraft or fleet in an airworthy condition. 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 Program prepares students to become avionics (aviation electronics) technicians with specific understanding of circuit theory, troubleshooting and repair of avionics equipment and systems, such as Very High Frequency Communications (VHF COMM), VHF Omnidirectional Range (VOR), Instrument Landing Systems (ILS), Automatic Direction Finder (ADF), Transponder, Distance Measuring Equipment (DME), Area Navigation (RNAV), and 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) prepare the student for FCC license examinations, and

(3) apply toward various University degree programs. These programs are available on the Daytona Beach Campus and at selected locations of the International Campus.

## MANAGEMENT PROGRAMS

The University offers three degree programs to prepare students for managerial roles in the Aviation Industry. Aviation Management is the primary four year degree for students anticipating a career in any aspect of business, and it includes a particular focus on the needs of the aviation industry. A similar four year degree program in Aviation Maintenance Management is more narrowly focused on the supervisory role and technological requirements of aviation maintenance activities. The third degree, Aviation Administration, is a two-year upper level program designed for students who desire to enter the management field at the beginning of their junior year. All three programs provide sufficient electives for students to pursue individual specializations for career objectives within the field.

## 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.

Mockups, procedures trainers, part-task trainers, and simulators, provide 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 under different FAA General Aviation District Offices 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.

## GRADUATE PROGRAMS

For the bachelor degree holder seeking advanced study in aeronautical science and management of aviation entities, three program alternatives are available at the Master level.

The Master of Business Administration in Aviation (MBA-A) blends further development of management skills, tools and techniques with study of the unique features of the aviation industry, placing emphasis on the educational needs of the practitioner. The Master of Aeronautical Science (MAS) incorporates study in the major technical specialties of aviation. The commercial/instrument pilot in this program probes the state of the art in areas such as communications and control, aircraft systems, maintenance management, safety and accident investigation and human factors, and then selects areas of study suited to individual career preferences. The Master of Aviation Management (MAM) departs from the more conventional business administration curriculum by weighting the course of study in favor of the managerial skills most useful to the leaders of teams of aviation specialists. Greater opportunity is available to tailor one's program to the operational challenges of a particular part of aviation.

For more information, request a current Graduate catalog by contacting one of the following:

1. The local Embry-Riddle Resident Center representative.
2. The Director of Records and Registration, International Campus, at the address given in the front of the catalog.
3. The Director of E-RAU Programs at the Miami Education Consortium  
11300 N.E. Second Avenue  
Miami, FL 33161

## AIR TRAFFIC CONTROL

E-RAU participates in cooperative agreements with several of the Federal Aviation Administration (FAA) Regions. Students who meet the eligibility requirements and are selected by the FAA gain on-the-job training in air traffic control career positions while earning college credits. Students who successfully complete two six-month internship periods at an Air Traffic Control Center and all other requirements for the Bachelor's degree are eligible for non-competitive, career-conditional appointments with the FAA. For more information, see the Aeronautical Studies degree program

(3) apply toward various University degree programs. These programs are available on the Daytona Beach Campus and at selected locations of the International Campus.

## MANAGEMENT PROGRAMS

The University offers three degree programs to prepare students for managerial roles in the Aviation Industry. Aviation Management is the primary four year degree for students anticipating a career in any aspect of business, and it includes a particular focus on the needs of the aviation industry. A similar four year degree program in Aviation Maintenance Management is more narrowly focused on the supervisory role and technological requirements of aviation maintenance activities. The third degree, Aviation Administration, is a two-year upper level program designed for students who desire to enter the management field at the beginning of their junior year. All three programs provide sufficient electives for students to pursue individual specializations for career objectives within the field.

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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 under different FAA General Aviation District Offices 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.

## GRADUATE PROGRAMS

For the bachelor degree holder seeking advanced study in aeronautical science and management of aviation entities, three program alternatives are available at the Master level.

The Master of Business Administration in Aviation (MBA-A) blends further development of management skills, tools and techniques with study of the unique features of the aviation industry, placing emphasis on the educational needs of the practitioner. The Master of Aeronautical Science (MAS) incorporates study in the major technical specialties of aviation. The commercial/instrument pilot in this program probes the state of the art in areas such as communications and control, aircraft systems, maintenance management, safety and accident investigation and human factors, and then selects areas of study suited to individual career preferences. The Master of Aviation Management (MAM) departs from the more conventional business administration curriculum by weighting the course of study in favor of the managerial skills most useful to the leaders of teams of aviation specialists. Greater opportunity is available to tailor one's program to the operational challenges of a particular part of aviation.

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3. The Director of E-RAU Programs at the Miami Education Consortium  
11300 N.E. Second Avenue  
Miami, FL 33161

## AIR TRAFFIC CONTROL

E-RAU participates in cooperative agreements with several of the Federal Aviation Administration (FAA) Regions. Students who meet the eligibility requirements and are selected by the FAA gain on-the-job training in air traffic control career positions while earning college credits. Students who successfully complete two six-month internship periods at an Air Traffic Control Center and all other requirements for the Bachelor's degree are eligible for non-competitive, career-conditional appointments with the FAA. For more information, see the Aeronautical Studies degree program

with Area of Concentration in Air Traffic Control described elsewhere in this Catalog.

## COOPERATIVE EDUCATION

The Cooperative Education (Co-op) concept is based on the theory that learning is reinforced by practical work experience. The Co-op program is optional and open to full-time undergraduate students enrolled in degree programs.

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 assignment.

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 Department 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 Foreign Student Advisor regarding visa requirements for working in the United States.

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

## RESERVE OFFICER TRAINING

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) courses and receive academic credit in an Area of Concentration in the Aeronautical Studies program or elective course credit in other E-RAU programs. Upon graduation, those students who complete AFROTC receive commissions as officers in the United States Air Force.

Any qualified student may pursue this opportunity provided he or she has at least four trimesters remaining at the University. (AFROTC courses are not offered at E-RAU during the summer term). The curriculum offers a choice of either a two or four-year program.

### **Four-Year Program**

Enrollment procedures for the first two years of the four-year program, the General Military Course (GMC), are the same as for any other college course. The student simply selects the appropriate AFROTC class during registration. Students in the GMC are under no obligation to the Air Force and may withdraw from the class in the same manner as they might withdraw from any other course. Those who decide to continue in the final two years, the Professional Officer Course (POC), receive a monetary allowance and incur an obligation to serve in the Air Force upon commissioning. Prior to entering the POC, each student must pass a medical examination, receive a competitive score on the Air Force Officer Qualifying Test (AFOQT), and complete a four-week summer field training session at an Air Force base.

### **Two-Year Program**

The two-year program is identical to the last two years of the four-year program but is preceded by a six-week summer field training session at an Air Force base. Two-year program students must also receive a competitive score on the AFOQT and pass an Air Force medical examination prior to attending field training.

### **Finances**

Textbooks for all AFROTC courses are free. Students enrolled in the POC receive a \$100-per-month tax-free subsistence allowance (up to a total of \$2000 for the two years). In addition, those attending summer field training receive travel pay to and from the Air Force base hosting the session plus free room, board and pay while attending the session.

Embry-Riddle students enjoy a high selection rate for AFROTC scholarships that pay full tuition, lab and incidental fees, textbooks, and the \$100 monthly tax-free subsistence allowance. Four-year scholarships are available, on a competitive basis, to high school graduates interested in Aeronautical Engineering while additional technical scholarships are reserved for students already enrolled in the AFROTC program at Embry-Riddle.

For information, contact AFROTC Det. 157, Embry-Riddle Aeronautical University, Daytona Beach, FL 32014, or AFROTC Det. 027A, Embry-Riddle Aeronautical University, Prescott, AZ 86301.

## **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 U.S. Army, U.S. 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 Fort Bragg, NC, 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 Fort 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 Fort Knox receive approximately \$800 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 of age 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.

## 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.

# AVIATION EDUCATION DESIGN DEPARTMENT

The Aviation Education Design Department is responsible for coordinating the development and design of all E-RAU curriculum materials. The department uses the expertise of industry, government, and E-RAU faculty in the development of courses and course materials to meet the needs of all E-RAU campuses. The department is capable of producing materials in a variety of formats, including textbooks, instructor course progression guides, self-paced independent study, interactive video, slide-tape, audio tapes, and diagnostic materials. The emphasis of Aviation Education Design is on the quality and currency of the curriculum as well as creative delivery systems which stimulate student learning.

# Degree Programs

In this chapter, degree programs are grouped into six aviation disciplines:

- Aeronautical Engineering Program**
- Aircraft Engineering Technology Programs**
- Aviation Computer Programs**
- Aviation Maintenance Programs**
- Aviation Management Programs**
- Flight Programs**

At the beginning of each group, degree programs and related Areas of Concentration are listed. Within each degree program, listings show the courses, both required and elective, which must be taken to attain the degree. The listings are guides for arranging optimum sequences of courses with their prerequisites. In many cases, it is not mandatory that courses be taken in the exact order shown.

## AERONAUTICAL ENGINEERING PROGRAM

### *Aeronautical Engineering*

**Bachelor of Science**

#### 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 Analytical Geometry I and ET 110 Drafting and Descriptive Geometry.

#### DEGREE REQUIREMENTS

The Bachelor of Science in Aeronautical Engineering degree program requires 138 credit hours. The program can be completed

in nine trimesters. The courses necessary to earn this degree are listed below.

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	AE 101 Intro. to Aeronautical Engineering	2
	ET 110 Drafting and Descriptive Geometry	2
	MA 241 Calculus and Analytical Geometry I	4
	PS 105 Chemistry I with Lab	4
	HU 120 Communications I	3
	—	15
SECOND	MA 242 Calculus and Analytical Geometry II	4
	PS 106 Chemistry II with Lab	4
	PS 201 Engineering Physics I	5
	HU 121 Communications II	3
	—	16
THIRD	ES 201 Statics	3
	MA 243 Calculus and Analytical Geometry III	4
	PS 202 Engineering Physics II	5
	CS 210 Scientific Programming	3
	—	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
	—	15
FIFTH	AE 301 Aerodynamics I	3
	AE 304 Aircraft Structures I	3
	HU 220 Communications III	3
	MA 441 Advanced Engineering Mathematics I	3
	PS 303 Modern Physics	3
	—	15
SIXTH	AE 302 Aerodynamics II	3
	AE 309 Experimental Aerodynamics	2
	AE 404 Aircraft Structures II	3
	ES 305 Thermodynamics	3
	EC 210 Microeconomics	3
	SS 110 World History OR	
	SS 120 American History	3
	—	17
SEVENTH	AE 407 Matrix Structural Methods	3
	AE 408 Turbine and Rocket Engines	3
	AE 413 Airplane Stability and Control	3
	ES 307 Engineering Materials Science w/Lab	3
	ES 404 Electrical Engineering I w/Lab	4
	—	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
	MA	Mathematics Elective	3
			—
			17
NINTH	AE 421	Aircraft Detail Design	3
	HU/SS	Elective (300-400 level)	3
		Technical Electives (300-400 level)	6
			—
			12
TOTAL			138

#### TECHNICAL ELECTIVES:

AE 399, 402, 411, 415, 433, 499  
 ES 399, 403, 406, 408, 409, 412, 499  
 ET 307, 401  
 CS 312, 335, 340, 350, 360, 372, 399, 410, 430, 499  
 CE (AE): By Special Arrangement

#### MATHEMATICS ELECTIVES:

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

## AIRCRAFT ENGINEERING TECHNOLOGY PROGRAMS

### *Aircraft Engineering Technology*

**Bachelor of Science  
 Associate in Science**

#### ADMISSION REQUIREMENTS

Students entering this program should have a basic background in math, physics and chemistry. College algebra and trigonometry are entry level math courses. Students wishing to strengthen their backgrounds in the basic sciences before enrolling in the prescribed course sequence should consult the Department Chair for guidance in course selection.

## DEGREE REQUIREMENTS

The Bachelor of Science degree in Aircraft Engineering Technology requires 129 trimester credit hours, as outlined in the course list below.

The option to take the Type 147 Aviation Maintenance Technology Curriculum provides nine credit hours toward the Aircraft Engineering Technology degree. If taken, the Type 147 courses replace six hours of technical electives and the open elective in the eighth trimester.

TRIMESTER	COURSE NUMBER/TITLE	CREDITS
FIRST	* PS 105 Chemistry I with Lab	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
	—	17
SECOND	* PS 106 Chemistry II with Lab	4
	* HU 121 Communications II	3
	* ET 110 Drafting and Descriptive Geometry	2
	* MA 241 Calculus and Analytical Geometry I	4
	* EC 210 Microeconomics	3
	—	16
THIRD	* HU 220 Communications III	3
	* PS 201 Engineering Physics I	5
	* MA 242 Calculus and Analytical Geometry II	4
	* CS 210 Scientific Programming	3
	—	15
FOURTH	* PS 202 Engineering Physics II	5
	MA 245 Applied Technical Mathematics	3
	* SS 210 Sociology OR SS 220 Psychology	3
	* HU 221 Technical Report Writing	3
	* ET 201 Technical Mechanics	4
		—
FIFTH	ET 301 Applied Aerodynamics I w/Lab	3
	ET 302 Applied Strength of Materials w/Lab	3
	ET 305 Applied Thermodynamics with Lab	4
	ET 306 Applied Electrical Science with Lab	3
	* HU/SS Elective	3
		—
SIXTH	ET 304 Aircraft Structural Analysis w/Lab	4
	ET 307 Manufacturing Processes and Materials with Lab	4
	ET 308 Applied Aerodynamics II	3

	MS 105	American Business Enterprise	3
	HU/SS	Elective	3
			—
			17
SEVENTH	ET 303	Aircraft Drafting	3
	ET 401	Mechanical Design	3
	ET 402	Applied Instrumentation Lab	3
	ET 404	Aircraft Performance and Design	3
		Technical Elective	3
			—
			15
EIGHTH	ET 403	Aircraft Detail Design	3
	ET 405	Non-Destructive Testing and Quality Assurance with Lab	3
	ET 406	Aircraft Systems Analysis and Design	3
		Technical Elective	3
		Open Elective	3
			—
			15
TOTAL			129

- TECHNICAL ELECTIVES:**  
 ET 399, 499  
 CS 301 and CS 335 or CS 350 or CS 360  
 MA 412  
 PS 303  
 CE (ET): By Special Arrangement

\*Courses required for the Associate in Science degree in Aircraft Engineering Technology.

## 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 Type 147 Aviation Maintenance Technology Curriculum or possess FAA Airframe and Powerplant ratings.

## DEGREE REQUIREMENTS

The Bachelor of Science degree in Aircraft Engineering Technology requires 129 trimester credit hours, as outlined in the course list below.

The option to take the Type 147 Aviation Maintenance Technology Curriculum provides nine credit hours toward the Aircraft Engineering Technology degree. If taken, the Type 147 courses replace six hours of technical electives and the open elective in the eighth trimester.

TRIMESTER COURSE NUMBER/TITLE		CREDITS
FIRST	* PS 105 Chemistry I with Lab	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
		—
		17
SECOND	* PS 106 Chemistry II with Lab	4
	* HU 121 Communications II	3
	* ET 110 Drafting and Descriptive Geometry	2
	* MA 241 Calculus and Analytical Geometry I	4
	* EC 210 Microeconomics	3
		—
		16
THIRD	* HU 220 Communications III	3
	* PS 201 Engineering Physics I	5
	* MA 242 Calculus and Analytical Geometry II	4
	* CS 210 Scientific Programming	3
		—
		15
FOURTH	* PS 202 Engineering Physics II	5
	MA 245 Applied Technical Mathematics	3
	* SS 210 Sociology OR SS 220 Psychology	3
	* HU 221 Technical Report Writing	3
	* ET 201 Technical Mechanics	4
		—
		18
FIFTH	ET 301 Applied Aerodynamics I w/Lab	3
	ET 302 Applied Strength of Materials w/Lab	3
	ET 305 Applied Thermodynamics with Lab	4
	ET 306 Applied Electrical Science with Lab	3
	* HU/SS Elective	3
		—
		16
SIXTH	ET 304 Aircraft Structural Analysis w/Lab	4
	ET 307 Manufacturing Processes and Materials with Lab	4
	ET 308 Applied Aerodynamics II	3

	MS 105	American Business Enterprise	3
	HU/SS	Elective	3
			—
			17
SEVENTH	ET 303	Aircraft Drafting	3
	ET 401	Mechanical Design	3
	ET 402	Applied Instrumentation Lab	3
	ET 404	Aircraft Performance and Design	3
		Technical Elective	3
			—
			15
EIGHTH	ET 403	Aircraft Detail Design	3
	ET 405	Non-Destructive Testing and Quality Assurance with Lab	3
	ET 406	Aircraft Systems Analysis and Design	3
		Technical Elective	3
		Open Elective	3
			—
			15
TOTAL			129

**TECHNICAL ELECTIVES:**

ET 399, 499

CS 301 and CS 335 or CS 350 or CS 360

MA 412

PS 303

CE (ET): By Special Arrangement

\*Courses required for the Associate in Science degree in Aircraft Engineering Technology.

## 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 Type 147 Aviation Maintenance Technology Curriculum or possess FAA Airframe and Powerplant ratings.

# AVIATION COMPUTER PROGRAMS

## *Aviation Computer Programming Computer Science with Aviation Applications*

### *Aviation Computer Programming*

Associate in Science

#### DEGREE REQUIREMENTS

Candidates for the Associate in Science in Aviation Computer Programming must complete 66 trimester hours in the areas of mathematics, humanities and social science, economics, management, computer science and general electives.

COURSE NUMBER/TITLE	CREDIT
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
CS 216 Structured Programming	3
CS 218 COBOL Programming	3
CS 220 Digital Logic and Computer Operation	3
CS 312 Assembly Language Programming	3
CS 318 Advanced BASIC Programming w/Aviation Applications OR	
CS 320 Advanced COBOL w/Aviation Applications OR	
CS 360 Advanced FORTRAN w/Aviation Applications	3
CS 330 Systems Design and Documentation	3
CS 335 Introduction to Computer Graphics	3
EC 210 Microeconomics OR	
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 140 College Algebra	3
MA 211 Statistics w/Aviation Applications OR	
MA 222 Business Statistics	3
MS 105 American Business Enterprise	3
SS 110 World History OR	
SS 120 American History	3
SS 210 Introduction to Sociology OR	
SS 220 Introduction to Psychology	3
Electives	12
TOTAL	66

# **Computer Science with Aviation Applications**

## **Bachelor of Science**

### **DEGREE REQUIREMENTS**

The Bachelor of Science degree can be earned in eight trimesters. A minimum of 132 trimester hours of credit is required.

Students entering this program are expected to have completed a basic typing or word-processing course. Those who haven't should enroll in CS 101 - Introduction to Keyboard Operations.

### **General Education Requirements**

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 222 Business Statistics OR	
MA 211 Statistics With Aviation Applications	3
MA 241 Calculus and Analytical Geometry I	4
MA 242 Calculus and Analytical Geometry II	4
MS 105 American Business Enterprise	3
PS Electives	6
SS 110 World History OR	
SS 120 American History	3
SS 210 Introduction to Sociology	3
SS 220 Introduction to Psychology	3
	<hr/>
	50

### **Computer Science Requirements**

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
CS 216 Structured Programming	3
CS 218 COBOL Programming	3
CS 220 Digital Logic and Computer Operations	3
CS 301 Introduction to Discrete Structures	3
CS 312 Assembly Language Programming	3
CS 318 Advanced BASIC w/Aviation Applications OR	
CS 320 Advanced COBOL w/Aviation Applications OR	
CS 360 Advanced FORTRAN w/Aviation Applications	3
CS 330 Systems Design and Documentation	3
CS 335 Introduction to Computer Graphics	3
CS 370 Computer Organization	3
CS 372 Introduction to Microprocessors	3
CS 410 Data Structures	3
CS 420 Operating Systems	3

# AVIATION COMPUTER PROGRAMS

## *Aviation Computer Programming Computer Science with Aviation Applications*

### *Aviation Computer Programming*

Associate in Science

#### DEGREE REQUIREMENTS

Candidates for the Associate in Science in Aviation Computer Programming must complete 66 trimester hours in the areas of mathematics, humanities and social science, economics, management, computer science and general electives.

COURSE NUMBER/TITLE	CREDITS
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
CS 216 Structured Programming	3
CS 218 COBOL Programming	3
CS 220 Digital Logic and Computer Operation	3
CS 312 Assembly Language Programming	3
CS 318 Advanced BASIC Programming w/Aviation Applications OR	
CS 320 Advanced COBOL w/Aviation Applications OR	
CS 360 Advanced FORTRAN w/Aviation Applications	3
CS 330 Systems Design and Documentation	3
CS 335 Introduction to Computer Graphics	3
EC 210 Microeconomics OR	
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 140 College Algebra	3
MA 211 Statistics w/Aviation Applications OR	
MA 222 Business Statistics	3
MS 105 American Business Enterprise	3
SS 110 World History OR	
SS 120 American History	3
SS 210 Introduction to Sociology OR	
SS 220 Introduction to Psychology	3
Electives	12
TOTAL	66



# Computer Science with Aviation Applications

## Bachelor of Science

### DEGREE REQUIREMENTS

The Bachelor of Science degree can be earned in eight trimesters. A minimum of 132 trimester hours of credit is required.

Students entering this program are expected to have completed a basic typing or word-processing course. Those who haven't should enroll in CS 101 - Introduction to Keyboard Operations.

### General Education Requirements

COURSE NUMBER/TITLE	CREDITS
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 222 Business Statistics OR	
MA 211 Statistics With Aviation Applications	3
MA 241 Calculus and Analytical Geometry I	4
MA 242 Calculus and Analytical Geometry II	4
MS 105 American Business Enterprise	3
PS Electives	6
SS 110 World History OR	
SS 120 American History	3
SS 210 Introduction to Sociology	3
SS 220 Introduction to Psychology	3
	<hr/>
	50

### Computer Science Requirements

COURSE NUMBER/TITLE	CREDITS
CS 216 Structured Programming	3
CS 218 COBOL Programming	3
CS 220 Digital Logic and Computer Operations	3
CS 301 Introduction to Discrete Structures	3
CS 312 Assembly Language Programming	3
CS 318 Advanced BASIC w/Aviation Applications OR	
CS 320 Advanced COBOL w/Aviation Applications OR	
CS 360 Advanced FORTRAN w/Aviation Applications	3
CS 330 Systems Design and Documentation	3
CS 335 Introduction to Computer Graphics	3
CS 370 Computer Organization	3
CS 372 Introduction to Microprocessors	3
CS 410 Data Structures	3
CS 420 Operating Systems	3

CS 440	Data Base Management Systems	3
CS 460	Telecommunications Systems	3
CS	Upper Level Electives	6
		<hr/>
		48
Electives		
	Upper Level Electives	12
	Open Electives (May include up to 12 hours in the CS Cooperative Education Program)	22
		<hr/>
		34
TOTAL		132

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

# AVIATION MAINTENANCE PROGRAMS

*Aircraft Maintenance*

*Aviation Maintenance Management*

*see Aviation Management*

*Aviation Maintenance Technology*

*Aviation Technology*

Flight Option

Avionics Option

*Avionics Maintenance Technology*

## *Aircraft Maintenance*

Associate in Science

### DEGREE REQUIREMENTS

The Associate in Science degree in Aircraft Maintenance requires completion of the following:

E-RAU Type 147 Aviation Maintenance Technology Program

OR

E-RAU Type 65 Aviation Maintenance Technology Program plus 16 hours of electives chosen from the following disciplines:

AMT/AS/AV/CS/EL/FA/MS; OR AMT 355 and AMT 455

AND

36 designated credits as follows:

COURSE NUMBER/TITLE	CREDITS
HU 120 Communications I	3
HU 121 Communications II	3
EC 211 Macroeconomics	3
MA 111 College Mathematics for Aviation I	3
MA 112 College Mathematics for Aviation II OR	
MA 211 Statistics with Aviation Applications	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 305 Management Analysis and Concepts	3
AS 101 History of Aviation OR	
AS 303 Government and Aviation	3
PS 102 Explorations in Physics	3
SS 220 Introduction to Psychology	3

CS 440	Data Base Management Systems	3
CS 460	Telecommunications Systems	3
CS	Upper Level Electives	6
		—
		48
<b>Electives</b>		
	Upper Level Electives	12
	Open Electives (May include up to 12 hours in the CS Cooperative Education Program)	22
		—
		34
<b>TOTAL</b>		132

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

# AVIATION MAINTENANCE PROGRAMS

*Aircraft Maintenance*

*Aviation Maintenance Management*

*see Aviation Management*

*Aviation Maintenance Technology*

*Aviation Technology*

Flight Option

Avionics Option

*Avionics Maintenance Technology*

## *Aircraft Maintenance*

Associate in Science

### DEGREE REQUIREMENTS

The Associate in Science degree in Aircraft Maintenance requires completion of the following:

E-RAU Type 147 Aviation Maintenance Technology Program

OR

E-RAU Type 65 Aviation Maintenance Technology Program plus 16 hours of electives chosen from the following disciplines:

AMT/AS/AV/CS/EL/FA/MS; OR AMT 355 and AMT 455

AND

36 designated credits as follows:

COURSE NUMBER/TITLE	CREDITS
HU 120 Communications I	3
HU 121 Communications II	3
EC 211 Macroeconomics	3
MA 111 College Mathematics for Aviation I	3
MA 112 College Mathematics for Aviation II OR	
MA 211 Statistics with Aviation Applications	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 305 Management Analysis and Concepts	3
AS 101 History of Aviation OR	
AS 303 Government and Aviation	3
PS 102 Explorations in Physics	3
SS 220 Introduction to Psychology	3

CS 105	Introduction to Computers in Aviation OR	
CS 109	Introduction to Computer Programming w/BASIC	3
		<hr/>
TOTAL		36

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, with the exception of AS 101 and CS 105 which cannot be credited toward the Bachelor of Science degree in Aviation Maintenance Management.

## *Aviation Maintenance Technology*

### Associate

This degree program is open only to Type 147 students at the Daytona Beach Campus.

### 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 I)	
AMT 201	Aircraft Structures and Sheet Metal Fabrication	4
AMT 202	Aircraft Wood, Fabric and Finishes	2
AMT 203	Aircraft Instruments and Communication/Navigation Systems	2
AMT 204	Aircraft Welding, Assembly and Rigging	4
HU 120	Communications I	3
		<hr/>
		15
THIRD	(Airframe II)	
AMT 205	Aircraft Electrical Systems	4
AMT 206	Hydraulic and Pneumatic Systems	2
AMT 207	Aircraft Environmental and Fuel Systems	3
AMT 208	Aircraft Landing Gear Systems	3
MA 111	College Math for Aviation I	3
		<hr/>
		15

FOURTH	(Powerplant I)	
AMT 209	Aircraft Reciprocating Engines	3
AMT 210	Aircraft Powerplant Systems	3
AMT 211	Engine Electrical and Ignition Systems	3
AMT 212	Propellers and Propeller Systems	3
AS 100	Foundations of Aeronautics	4
		—
		16
FIFTH	(Powerplant II)	
AMT 213	Engine Installation and Operation	2
AMT 214	Reciprocating Engine Overhaul	4
AMT 215	Turbine Engines and Turbine Engine Systems	6
MS 105	American Business Enterprise	3
		—
		15
TOTAL		73

## *Aviation Technology*

### Bachelor of Science

#### DEGREE REQUIREMENTS

The Bachelor of Science in Aviation Technology requires a minimum of 134 credit hours. The student must:

a. Complete the Type 147 AMT Program (60 Credit Hours)

OR

b. Complete the Type 65 AMT Program (20 Credit Hours)

PLUS

Electives from AMT/AS/AV/CS/EL/FA/MS (16 Credit Hours)

OR

c. Possess an FAA A&P Maintenance Certificate (36 Credit Hours will be granted).

The student must then complete a Core program and either the Flight or Avionics Option.

#### CORE

COURSE NUMBER/TITLE	CREDITS	
AS 101	History of Aviation	3
AS 303	Government and Aviation	3
MA 111	College Mathematics for Aviation I	3
MA 112	College Mathematics for Aviation II	3
PS 101	Basic Chemistry	3
PS 103	Technical Physics I	3
PS 104	Technical Physics II	3
EC 210	Microeconomics OR	
EC 211	Macroeconomics	3
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
SS 220	Introduction to Psychology	3
CS 109	Introduction to Computer Programming w/ BASIC	3
		—
		45

## FLIGHT OPTION

COURSE NUMBER/TITLE	CREDITS	
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
FA 104	Primary Flight	2
FA 105	Private Pilot Certification	2
FA 205	Basic Attitude Instrument and Advanced Flight Maneuvering	2
FA 206	Instrument Flight Transition	2
FA 302	Commercial Pilot Certification	2
		—
		40

## AVIONICS OPTION

COURSE NUMBER/TITLE	CREDITS	
EL 101	Basic Electronic 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 221	Introduction to Pulse and Digital Circuits	4
EL 222	Basic Electronic Circuits and Systems	4
EL 321	Advanced Digital Circuits and Systems	4
EL 322	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
AV 341	Advanced Avionics Equipment Troubleshooting and Repair Lab	2
		—
		44



Students taking the Flight Option must complete 13 credits and students taking the Avionics Option must complete 18 credits from the following list of courses:

COURSE NUMBER/TITLE		CREDITS
MS 105	American Business Enterprise	3
MS 210	Financial Accounting I	3
MS 212	Financial Accounting II OR	
MS 390	Business Law	3
MS 305	Management Analysis and Concepts	3
MS 313	Personnel Management	3
MS 316	Psychology of Management	3
MS 405	General Aviation Marketing	3
AS 405	Aviation Law	3
AS 412	Corporate and Business Aviation	3

Total credits required will vary from 134 to 167 depending upon the option and the method of obtaining the maintenance qualification.

### AVIATION TECHNOLOGY TYPE 65\*\* AMT

COURSE NUMBER/TITLE		CREDITS
**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

\*\*These courses are available only at International Campus locations.

### AVIATION TECHNOLOGY TYPE 147\* AMT

COURSE NUMBER/TITLE		CREDITS
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
AMT 201	Aircraft Structures and Sheet Metal Fabrication	4
AMT 202	Aircraft Wood, Fabric and Finishes	2
AMT 203	Aircraft Instruments and Communications/Navigation	2
AMT 204	Aircraft Welding, Assembly and Finishes	4
AMT 205	Aircraft Electrical Systems	4
AMT 206	Hydraulic and Pneumatic Systems	2
AMT 207	Aircraft Environmental & Fuel Systems	3
AMT 208	Aircraft Landing Gear Systems	3
AMT 209	Aircraft Reciprocating Engines	3
AMT 210	Aircraft Powerplant Systems	3
AMT 211	Engine Electrical & Ignition Systems	3
AMT 212	Propellers and Propeller Systems	3

HU 220	Communications III	3
HU 221	Technical Report Writing	3
HU 250	Introduction to Logic	3
SS 220	Introduction to Psychology	3
CS 109	Introduction to Computer Programming w/ BASIC	3
		<hr/> 45

### FLIGHT OPTION

COURSE NUMBER/TITLE	CREDITS	
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
FA 104	Primary Flight	2
FA 105	Private Pilot Certification	2
FA 205	Basic Attitude Instrument and Advanced Flight Maneuvering	2
FA 206	Instrument Flight Transition	2
FA 302	Commercial Pilot Certification	2
		<hr/> 40

### AVIONICS OPTION

COURSE NUMBER/TITLE	CREDITS	
EL 101	Basic Electronic 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 221	Introduction to Pulse and Digital Circuits	4
EL 222	Basic Electronic Circuits and Systems	4
EL 321	Advanced Digital Circuits and Systems	4
EL 322	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
AV 341	Advanced Avionics Equipment Troubleshooting and Repair Lab	2
		<hr/> 44

Students taking the Flight Option must complete 13 credits and students taking the Avionics Option must complete 18 credits from the following list of courses:

COURSE NUMBER/TITLE	CREDITS
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 212 Financial Accounting II OR	3
MS 390 Business Law	3
MS 305 Management Analysis and Concepts	3
MS 313 Personnel Management	3
MS 316 Psychology of Management	3
MS 405 General Aviation Marketing	3
AS 405 Aviation Law	3
AS 412 Corporate and Business Aviation	3

Total credits required will vary from 134 to 167 depending upon the option and the method of obtaining the maintenance qualification.

### AVIATION TECHNOLOGY TYPE 65\*\* AMT

COURSE NUMBER/TITLE	CREDITS
**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

\*\*These courses are available only at International Campus locations

### AVIATION TECHNOLOGY TYPE 147\* AMT

COURSE NUMBER/TITLE	CREDITS
AMT 101 Physical Mathematics	2
AMT 102 Aviation Regulations, Records and Documents	2
AMT 103 Basic Electricity	3
AMT 104 Aircraft Servicing Procedures	3
AMT 105 Aviation Material	3
AMT 201 Aircraft Structures and Sheet Metal Fabrication	4
AMT 202 Aircraft Wood, Fabric and Finishes	2
AMT 203 Aircraft Instruments and Communications/Navigation	2
AMT 204 Aircraft Welding, Assembly and Finishes	4
AMT 205 Aircraft Electrical Systems	4
AMT 206 Hydraulic and Pneumatic Systems	2
AMT 207 Aircraft Environmental & Fuel Systems	3
AMT 208 Aircraft Landing Gear Systems	3
AMT 209 Aircraft Reciprocating Engines	3
AMT 210 Aircraft Powerplant Systems	3
AMT 211 Engine Electrical & Ignition Systems	3
AMT 212 Propellers and Propeller Systems	3

AMT 213	Engine Installation and Operation	2
AMT 214	Reciprocating Engine Overhaul	4
AMT 215	Turbine Engines and Turbine Engine Systems	6
TOTAL		<hr/> 60

\*This program available only at the Daytona Beach Campus.

## *Avionics Maintenance Technology*

**Associate in Science**

### DEGREE REQUIREMENTS

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

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	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 & Digital Circuits	4
	MS 105 American Business Enterprise	3
	MA 112 College Mathematics for Aviation II	3
	HU 121 Communications II	3
	<hr/>	17
THIRD	EL 222 Basic Electronic Circuits & Systems	4
	EL 321 Advanced Digital Circuits & Systems	4
	PS 103 Technical Physics I	3
	MS 210 Financial Accounting I	3
	CS 220 Digital Logic and Computer Operation	3
	<hr/>	17
FOURTH	EL 322 Advanced Electronic Circuits & 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 211	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
	CS 109	Introduction to Computer Programming w/BASIC	3
	AS 101	History of Aviation	3
			<hr/>
			17
TOTAL			85

# AVIATION MANAGEMENT PROGRAMS

## *Aviation Administration*

## *Aviation Maintenance Management*

Type 147 Option

Type 65 Option

Avionics Option

## *Aviation Management*

## *General Aeronautics*

## *Professional Aeronautics*

## *Aviation Administration*

Bachelor of Science

### ADMISSION REQUIREMENTS

Admission to the Bachelor of Science in Aviation Administration program is limited to students possessing one of the following prerequisites:

- a. An approved Associate Degree (University Parallel);  
OR
- b. An Aviation Related Associate Degree which includes a minimum of 24 credit hours of general education courses of which 6 hours must be in communications and 6 hours must be college level mathematics; OR
- c. 60 trimester (or equivalent) 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 science, marketing, engineering, business administration, management, transportation.	15
<b>TOTAL</b>	<b>60</b>

## DEGREE REQUIREMENTS

### CORE

COURSE NUMBER/TITLE	CREDITS
CS 109 Introduction to Computer Programming w/BASIC OR	3
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 222 Business Statistics OR	
MA 211 Statistics with Aviation Applications	3
MA 320 Decision Mathematics	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 212 Financial Accounting II	3
MS 305 Management Analysis and Concepts	3
MS 311 Marketing	3
MS 312 Managerial Accounting	3
MS 313 Personnel Management	3
MS 315 Finance	3
MS 316 Psychology of Management	3
MS 318 Business Data Processing	3
MS 390 Business Law	3

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54

Open Electives 6

An additional 12 hours must be taken from the following list of courses:

COURSE NUMBER/TITLE	CREDITS
AS 303 Government and Aviation	3
AS 405 Aviation Law	3
AS 409 Aviation Safety	3
AS 412 Corporate and Business Aviation	3
EC 310 Labor Economics	3
EC 420 Economics of Air Transportation	3
MS 319 Management Information Systems	3
MS 322 Aviation Insurance	3
MS 405 General Aviation Marketing	3
MS 408 Airport Management	3
MS 410 Management of Air Cargo	3
MS 412 Airport Planning and Design	3
MS 415 Airline Management	3
MS 419 Aviation Maintenance Management	3
MS 425 Trends and Current Problems in Air Transportation	3

TOTAL 72

Students whose prior academic program includes courses from the above curriculum must take an equivalent number of credit hours either from the optional list above or from the following:

COURSE NUMBER/TITLE	CREDITS
CS 216 Structured Programming	3
CS 218 COBOL Programming	3
CS 312 Assembly Language Programming	3
CS 320 Advanced COBOL Programming with Aviation Applications	3
EC 340 Managerial Economics	3
MS 331 Transportation Principles	3
MS 401 Management Planning and Control	3
MS 420 Industrial Management	3
MS 421 Small Business Management	3
MS 430 Management Applications	3
CE(AM) Upper Level Management Cooperative Education	12

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

## *Aviation Maintenance Management*

**Bachelor of Science**

### DEGREE REQUIREMENTS

The Bachelor of Science degree in Aviation Maintenance Management may be attained by completing one of the following options plus the Core curriculum:

- |    |  |                         |
|----|--|-------------------------|
| a. | Type 147 AMT Program   | 60 Credits              |
|    | MS 419 Aviation Maintenance Management                         | 3 Credits               |
|    | Open Electives   | 3 Credits               |
|    |  | <b>66 Credits Total</b> |
|    | <b>OR</b>  |                         |
| b. | Type 65 AMT Program  | 20 Credits              |
|    | Electives from AMT/AS/AV/CS/EL/FA/MS or<br>AMT 355 and AMT 455 | 16 Credits              |
|    | MS 419 Aviation Maintenance Management                         | 3 Credits               |
|    | Open Electives   | 3 Credits               |
|    |  | <b>42 Credits Total</b> |
|    | <b>OR</b>  |                         |
| c. | Possession of Airframe & Powerplant Maintenance<br>Certificate | 36 Credits              |
| MS | 419 Aviation Maintenance Management                            | 3 Credits               |
|    | Open Electives   | 3 Credits               |
|    |  | <b>42 Credits Total</b> |
|    | <b>OR</b>  |                         |
| d. | Avionics Maintenance Technology Program                        | 44 Credits              |



**CORE**

COURSE NUMBER/TITLE	CREDITS
AS 101 History of Aviation OR	
SS 110 World History OR	
SS 120 American History	3
CS 109 Introduction to Computer Programming with BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
EC 310 Labor Economics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
HU 330 Values and Ethics OR	
HU 250 Introduction to Logic	3
MA 120 Quantitative Methods I	3
MA 220 Quantitative Methods II	3
MA 222 Business Statistics OR	
MA 211 Statistics with Aviation Applications	3
MA 320 Decision Mathematics	3
*PS Electives	6
SS 220 Introduction to Psychology	3
HU/SS Elective	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 212 Financial Accounting II	3
MS 305 Management Analysis and Concepts	3
MS 311 Marketing	3
MS 312 Managerial Accounting	3
MS 313 Personnel Management	3
MS 315 Finance	3
MS 316 Psychology of Management	3
MS 318 Business Data Processing	3
MS 319 Management Information Systems	3
MS 390 Business Law	3
<b>TOTAL</b>	<b>90</b>

\*Avionics Option requires PS 103.

Total credits required will vary from 132 to 156 depending upon the method of obtaining the maintenance qualification.

**Associate in Science.**

The Associate in Science degree in Aviation Maintenance Management may be attained by completing one of the following options plus the core curriculum:

- (a) Type 147 AMT Program 60 credits

Students whose prior academic program includes courses from the above curriculum must take an equivalent number of credit hours either from the optional list above or from the following:

COURSE NUMBER/TITLE	CREDITS
CS 216 Structured Programming	3
CS 218 COBOL Programming	3
CS 312 Assembly Language Programming	3
CS 320 Advanced COBOL Programming with Aviation Applications	3
EC 340 Managerial Economics	3
MS 331 Transportation Principles	3
MS 401 Management Planning and Control	3
MS 420 Industrial Management	3
MS 421 Small Business Management	3
MS 430 Management Applications	3
CE(AM) Upper Level Management Cooperative Education	12

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

## *Aviation Maintenance Management*

### Bachelor of Science

#### DEGREE REQUIREMENTS

The Bachelor of Science degree in Aviation Maintenance Management may be attained by completing one of the following options plus the Core curriculum:

- |    |  |                         |
|----|--|-------------------------|
| a. | Type 147 AMT Program   | 60 Credits              |
|    | MS 419 Aviation Maintenance Management                         | 3 Credits               |
|    | Open Electives   | 3 Credits               |
|    |  | <b>66 Credits Total</b> |
|    | <b>OR</b>  |                         |
| b. | Type 65 AMT Program  | 20 Credits              |
|    | Electives from AMT/AS/AV/CS/EL/FA/MS or<br>AMT 355 and AMT 455 | 16 Credits              |
|    | MS 419 Aviation Maintenance Management                         | 3 Credits               |
|    | Open Electives   | 3 Credits               |
|    |  | <b>42 Credits Total</b> |
|    | <b>OR</b>  |                         |
| c. | Possession of Airframe & Powerplant Maintenance<br>Certificate | 36 Credits              |
| MS | 419 Aviation Maintenance Management                            | 3 Credits               |
|    | Open Electives   | 3 Credits               |
|    |  | <b>42 Credits Total</b> |
|    | <b>OR</b>  |                         |
| d. | Avionics Maintenance Technology Program                        | 44 Credits              |

**CORE**

COURSE NUMBER/TITLE	CREDITS
AS 101      History of Aviation OR	
SS 110      World History OR	
SS 120      American History	3
CS 109      Introduction to Computer Programming with BASIC OR	
CS 110      FORTRAN Programming	3
EC 210      Microeconomics	3
EC 211      Macroeconomics	3
EC 310      Labor Economics	3
HU 120      Communications I	3
HU 121      Communications II	3
HU 220      Communications III	3
HU 221      Technical Report Writing	3
HU 330      Values and Ethics OR	
HU 250      Introduction to Logic	3
MA 120      Quantitative Methods I	3
MA 220      Quantitative Methods II	3
MA 222      Business Statistics OR	
MA 211      Statistics with Aviation Applications	3
MA 320      Decision Mathematics	3
*PS      Electives	6
SS 220      Introduction to Psychology	3
HU/SS      Elective	3
MS 105      American Business Enterprise	3
MS 210      Financial Accounting I	3
MS 212      Financial Accounting II	3
MS 305      Management Analysis and Concepts	3
MS 311      Marketing	3
MS 312      Managerial Accounting	3
MS 313      Personnel Management	3
MS 315      Finance	3
MS 316      Psychology of Management	3
MS 318      Business Data Processing	3
MS 319      Management Information Systems	3
MS 390      Business Law	3
<b>TOTAL</b>	<b>90</b>

\*Avionics Option requires PS 103.

Total credits required will vary from 132 to 156 depending upon the method of obtaining the maintenance qualification.

**Associate in Science.**

The Associate in Science degree in Aviation Maintenance Management may be attained by completing one of the following options plus the core curriculum:

- (a) Type 147 AMT Program
60 credits

MS 419 Aviation Maintenance Management 3 credits  
63 credits Total

OR

(b) Type 65 AMT Program 20 credits  
Electives from AMT/AS/AV/CS/EL/FA/MS  
OR AMT 355 and 455 16 credits  
MS 419 Aviation Maintenance Management 3 credits  
39 credits Total

OR

(c) Possession of Airframe and Powerplant  
Maintenance Certificate 36 credits  
MS 419 Aviation Maintenance Management 3 credits  
39 credits Total

OR

(d) Avionics Maintenance Technology Program 44 credits  
MS 419 Aviation Maintenance Management 3 credits  
47 credits Total

**CORE**

COURSE NUMBER/TITLE		CREDITS
AS 101	History of Aviation OR	
SS 110	World History OR	
SS 120	American History	3
CS 109	Introduction to Computer Programming w/BASIC OR	
CS 110	FORTRAN Programming	3
EC 210	Microeconomics	3
EC 211	Macroeconomics	3
HU 120	Communications I	3
HU 121	Communications II	3
HU 220	Communications III	3
HU 221	Technical Report Writing	3
MA 120	Quantitative Methods I	3
MA 220	Quantitative Methods II	3
MA 222	Business Statistics OR	
MA 211	Statistics with Aviation Applications	3
*PS	Elective	3
SS 220	Introduction to Psychology	3
MS 105	American Business Enterprise	3
MS 210	Financial Accounting I	3
MS 212	Financial Accounting II	3
MS 305	Management Analysis and Concepts	3
MS 313	Personnel Management	3
MS 316	Psychology of Management	3
MS 318	Business Data Processing	3
<b>TOTAL</b>		<b>60</b>

\*Avionics Option requires PS 103.

Total credit hours required will vary from 99 to 123 depending upon the method of obtaining the maintenance qualification,

## AVIATION MAINTENANCE MANAGEMENT TYPE 147\*

### AMT

COURSE NUMBER/TITLE	CREDITS
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
AMT 201 Aircraft Structures and Sheet Metal Fabrication	4
AMT 202 Aircraft Wood, Fabric and Finishes	2
AMT 203 Aircraft Instruments and Communications/Navigation	2
AMT 204 Aircraft Welding, Assembly and Finishes	4
AMT 205 Aircraft Electrical Systems	4
AMT 206 Hydraulic and Pneumatic Systems	2
AMT 207 Aircraft Environmental & Fuel Systems	3
AMT 208 Aircraft Landing Gear Systems	3
AMT 209 Aircraft Reciprocating Engines	3
AMT 210 Aircraft Powerplant Systems	3
AMT 211 Engine Electrical & Ignition Systems	3
AMT 212 Propellers and Propeller Systems	3
AMT 213 Engine Installation and Operation	2
AMT 214 Reciprocating Engine Overhaul	4
AMT 215 Turbine Engines and Turbine Engine Systems	6
TOTAL	<hr/> 60

\*This program available only at the Daytona Beach Campus.

## AVIATION MAINTENANCE MANAGEMENT TYPE 65\*\*

### AMT

COURSE NUMBER/TITLE	CREDITS
**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
TOTAL	<hr/> 20

\*\*These courses are available only at International Campus locations.

## AVIATION MAINTENANCE MANAGEMENT AVIONICS

COURSE NUMBER/TITLE	CREDITS
EL 101 Basic Electronic 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

MS 419 Aviation Maintenance Management 3 credits  
63 credits Total

OR

(b) Type 65 AMT Program 20 credits  
Electives from AMT/AS/AV/CS/EL/FA/MS  
OR AMT 355 and 455 16 credits  
MS 419 Aviation Maintenance Management 3 credits  
39 credits Total

OR

(c) Possession of Airframe and Powerplant  
Maintenance Certificate 36 credits  
MS 419 Aviation Maintenance Management 3 credits  
39 credits Total

OR

(d) Avionics Maintenance Technology Program 44 credits  
MS 419 Aviation Maintenance Management 3 credits  
47 credits Total

## CORE

COURSE NUMBER/TITLE	CREDITS
AS 101 History of Aviation OR	
SS 110 World History OR	
SS 120 American History	3
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 120 Quantitative Methods I	3
MA 220 Quantitative Methods II	3
MA 222 Business Statistics OR	
MA 211 Statistics with Aviation Applications	3
*PS Elective	3
SS 220 Introduction to Psychology	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 212 Financial Accounting II	3
MS 305 Management Analysis and Concepts	3
MS 313 Personnel Management	3
MS 316 Psychology of Management	3
MS 318 Business Data Processing	3
TOTAL	60

\*Avionics Option requires PS 103.

Total credit hours required will vary from 99 to 123 depending upon the method of obtaining the maintenance qualification,

## AVIATION MAINTENANCE MANAGEMENT TYPE 147\*

### AMT

COURSE NUMBER/TITLE	CREDITS
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
AMT 201 Aircraft Structures and Sheet Metal Fabrication	4
AMT 202 Aircraft Wood, Fabric and Finishes	2
AMT 203 Aircraft Instruments and Communications/Navigation	2
AMT 204 Aircraft Welding, Assembly and Finishes	4
AMT 205 Aircraft Electrical Systems	4
AMT 206 Hydraulic and Pneumatic Systems	2
AMT 207 Aircraft Environmental & Fuel Systems	3
AMT 208 Aircraft Landing Gear Systems	3
AMT 209 Aircraft Reciprocating Engines	3
AMT 210 Aircraft Powerplant Systems	3
AMT 211 Engine Electrical & Ignition Systems	3
AMT 212 Propellers and Propeller Systems	3
AMT 213 Engine Installation and Operation	2
AMT 214 Reciprocating Engine Overhaul	4
AMT 215 Turbine Engines and Turbine Engine Systems	6
TOTAL	<hr/> 60

\*This program available only at the Daytona Beach Campus.

## AVIATION MAINTENANCE MANAGEMENT TYPE 65\*\*

### AMT

COURSE NUMBER/TITLE	CREDITS
**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
TOTAL	<hr/> 20

\*\*These courses are available only at International Campus locations.

## AVIATION MAINTENANCE MANAGEMENT AVIONICS

COURSE NUMBER/TITLE	CREDITS
EL 101 Basic Electronic 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

MS 419 Aviation Maintenance Management	3 credits
	63 credits Total
OR	
(b) Type 65 AMT Program	20 credits
Electives from AMT/AS/AV/CS/EL/FA/MS	
OR AMT 355 and 455	16 credits
MS 419 Aviation Maintenance Management	3 credits
	39 credits Total
OR	
(c) Possession of Airframe and Powerplant Maintenance Certificate	36 credits
MS 419 Aviation Maintenance Management	3 credits
	39 credits Total
OR	
(d) Avionics Maintenance Technology Program	44 credits
MS 419 Aviation Maintenance Management	3 credits
	47 credits Total

## CORE

COURSE NUMBER/TITLE	CREDITS
AS 101 History of Aviation OR	
SS 110 World History OR	
SS 120 American History	3
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 120 Quantitative Methods I	3
MA 220 Quantitative Methods II	3
MA 222 Business Statistics OR	
MA 211 Statistics with Aviation Applications	3
*PS Elective	3
SS 220 Introduction to Psychology	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 212 Financial Accounting II	3
MS 305 Management Analysis and Concepts	3
MS 313 Personnel Management	3
MS 316 Psychology of Management	3
MS 318 Business Data Processing	3
TOTAL	60

\*Avionics Option requires PS 103.

Total credit hours required will vary from 99 to 123 depending upon the method of obtaining the maintenance qualification,



**AVIATION MAINTENANCE MANAGEMENT TYPE 147\*****AMT**

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
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
AMT 201 Aircraft Structures and Sheet Metal Fabrication	4
AMT 202 Aircraft Wood, Fabric and Finishes	2
AMT 203 Aircraft Instruments and Communications/Navigation	2
AMT 204 Aircraft Welding, Assembly and Finishes	4
AMT 205 Aircraft Electrical Systems	4
AMT 206 Hydraulic and Pneumatic Systems	2
AMT 207 Aircraft Environmental & Fuel Systems	3
AMT 208 Aircraft Landing Gear Systems	3
AMT 209 Aircraft Reciprocating Engines	3
AMT 210 Aircraft Powerplant Systems	3
AMT 211 Engine Electrical & Ignition Systems	3
AMT 212 Propellers and Propeller Systems	3
AMT 213 Engine Installation and Operation	2
AMT 214 Reciprocating Engine Overhaul	4
AMT 215 Turbine Engines and Turbine Engine Systems	6
<b>TOTAL</b>	<b>60</b>

\*This program available only at the Daytona Beach Campus.

**AVIATION MAINTENANCE MANAGEMENT TYPE 65\*\*****AMT**

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
**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
<b>TOTAL</b>	<b>20</b>

\*\*These courses are available only at International Campus locations.

**AVIATION MAINTENANCE MANAGEMENT AVIONICS**

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
EL 101 Basic Electronic 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 221	Introduction to Pulse and Digital Circuits	4
EL 222	Basic Electronics Circuits and Systems	4
EL 321	Advanced Digital Circuits and Systems	4
EL 322	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
AV 341	Advanced Avionics Equipment Troubleshooting and Repair Lab	2
		<hr/>
		44

## *Aviation Management*

### Bachelor of Science

#### DEGREE REQUIREMENTS

The Bachelor of Science degree requires a minimum of 132 trimester academic credit hours, normally completed within eight trimesters. To attain the degree, students must complete the core courses, 30 credit hours from the A and B lists and 12 credit hours of electives.

#### CORE

COURSE NUMBER/TITLE	CREDITS	
AS 101	History of Aviation OR	
SS 110	World History OR	
SS 120	American History	3
CS 109	Introduction to Computer Programming w/BASIC OR	
CS 110	FORTRAN Programming	3
EC 210	Microeconomics	3
EC 211	Macroeconomics	3
EC 310	Labor Economics	3
HU 120	Communications I	3
HU 121	Communications II	3
HU 220	Communications III	3
HU 221	Technical Report Writing	3
HU 330	Values and Ethics OR	
HU 250	Introduction to Logic	3
MA 120	Quantitative Methods I	3
MA 220	Quantitative Methods II	3
MA 222	Business Statistics OR	
MA 211	Statistics with Aviation Applications	3
MA 320	Decision Mathematics	3
PS	Electives	6
SS 220	Introduction to Psychology	3
HU/SS	Elective	3
MS 105	American Business Enterprise	3

MS 210	Financial Accounting I	3
MS 212	Financial Accounting II	3
MS 305	Management Analysis and Concepts	3
MS 311	Marketing	3
MS 312	Managerial Accounting	3
MS 313	Personnel Management	3
MS 315	Finance	3
MS 316	Psychology of Management	3
MS 318	Business Data Processing	3
MS 319	Management Information Systems	3
MS 390	Business Law	3
<b>TOTAL</b>		<b>90</b>

15 credit hours from the A list of courses

### A LIST

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>	
AS 303	Government and Aviation	3
AS 405	Aviation Law	3
AS 409	Aviation Safety	3
AS 412	Corporate and Business Aviation	3
EC 420	Economics of Air Transportation	3
MS 322	Aviation Insurance	3
MS 405	General Aviation Marketing	3
MS 408	Airport Management	3
MS 410	Management of Air Cargo	3
MS 412	Airport Planning and Design	3
MS 425	Trends and Current Problems in Air Transportation	3

15 credit hours from the remaining A list courses or from the B list

### B LIST

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>	
CS 216	Structured Programming	3
CS 218	COBOL Programming	3
CS 312	Assembly Language Programming	3
CS 320	Advanced COBOL Programming	3
EC 340	Managerial Economics	3
MS 331	Transportation Principles	3
MS 401	Management Planning and Control	3
MS 419	Aviation Maintenance Management	3
MS 420	Industrial Management	3
MS 421	Small Business Management	3
MS 430	Management Applications	3
CE (AM)	Aviation Management Cooperative Education	12
	Open Electives	12
<b>TOTAL</b>		<b>132</b>

Students enrolled in the Army or Air Force ROTC program may substitute MY or AF courses for the open elective courses.

EL 221	Introduction to Pulse and Digital Circuits	4
EL 222	Basic Electronics Circuits and Systems	4
EL 321	Advanced Digital Circuits and Systems	4
EL 322	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
AV 341	Advanced Avionics Equipment Troubleshooting and Repair Lab	2
		<hr/> 44

## *Aviation Management*

### Bachelor of Science

#### DEGREE REQUIREMENTS

The Bachelor of Science degree requires a minimum of 132 trimester academic credit hours, normally completed within eight trimesters. To attain the degree, students must complete the core courses, 30 credit hours from the A and B lists and 12 credit hours of electives.

#### CORE

COURSE NUMBER/TITLE	CREDITS	
AS 101	History of Aviation OR	
SS 110	World History OR	
SS 120	American History	3
CS 109	Introduction to Computer Programming w/BASIC OR	
CS 110	FORTTRAN Programming	3
EC 210	Microeconomics	3
EC 211	Macroeconomics	3
EC 310	Labor Economics	3
HU 120	Communications I	3
HU 121	Communications II	3
HU 220	Communications III	3
HU 221	Technical Report Writing	3
HU 330	Values and Ethics OR	
HU 250	Introduction to Logic	3
MA 120	Quantitative Methods I	3
MA 220	Quantitative Methods II	3
MA 222	Business Statistics OR	
MA 211	Statistics with Aviation Applications	3
MA 320	Decision Mathematics	3
PS	Electives	6
SS 220	Introduction to Psychology	3
HU/SS	Elective	3
MS 105	American Business Enterprise	3

MS 210	Financial Accounting I	3
MS 212	Financial Accounting II	3
MS 305	Management Analysis and Concepts	3
MS 311	Marketing	3
MS 312	Managerial Accounting	3
MS 313	Personnel Management	3
MS 315	Finance	3
MS 316	Psychology of Management	3
MS 318	Business Data Processing	3
MS 319	Management Information Systems	3
MS 390	Business Law	3
TOTAL		90

15 credit hours from the A list of courses

### A LIST

COURSE NUMBER/TITLE	CREDITS	
AS 303	Government and Aviation	3
AS 405	Aviation Law	3
AS 409	Aviation Safety	3
AS 412	Corporate and Business Aviation	3
EC 420	Economics of Air Transportation	3
MS 322	Aviation Insurance	3
MS 405	General Aviation Marketing	3
MS 408	Airport Management	3
MS 410	Management of Air Cargo	3
MS 412	Airport Planning and Design	3
MS 425	Trends and Current Problems in Air Transportation	3

15 credit hours from the remaining A list courses or from the B list

### B LIST

COURSE NUMBER/TITLE	CREDITS	
CS 216	Structured Programming	3
CS 218	COBOL Programming	3
CS 312	Assembly Language Programming	3
CS 320	Advanced COBOL Programming	3
EC 340	Managerial Economics	3
MS 331	Transportation Principles	3
MS 401	Management Planning and Control	3
MS 419	Aviation Maintenance Management	3
MS 420	Industrial Management	3
MS 421	Small Business Management	3
MS 430	Management Applications	3
CE (AM)	Aviation Management Cooperative Education	12
	Open Electives	12
TOTAL		132

Students enrolled in the Army or Air Force ROTC program may substitute MY or AF courses for the open elective courses.

EL 221	Introduction to Pulse and Digital Circuits	4
EL 222	Basic Electronics Circuits and Systems	4
EL 321	Advanced Digital Circuits and Systems	4
EL 322	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
AV 341	Advanced Avionics Equipment Troubleshooting and Repair Lab	2
		<hr/>
		44

## *Aviation Management*

### Bachelor of Science

#### DEGREE REQUIREMENTS

The Bachelor of Science degree requires a minimum of 132 trimester academic credit hours, normally completed within eight trimesters. To attain the degree, students must complete the core courses, 30 credit hours from the A and B lists and 12 credit hours of electives.

#### CORE

COURSE NUMBER/TITLE	CREDITS
AS 101 History of Aviation OR	
SS 110 World History OR	
SS 120 American History	3
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
EC 310 Labor Economics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
HU 330 Values and Ethics OR	
HU 250 Introduction to Logic	3
MA 120 Quantitative Methods I	3
MA 220 Quantitative Methods II	3
MA 222 Business Statistics OR	
MA 211 Statistics with Aviation Applications	3
MA 320 Decision Mathematics	3
PS Electives	6
SS 220 Introduction to Psychology	3
HU/SS Elective	3
MS 105 American Business Enterprise	3

MS 210	Financial Accounting I	3
MS 212	Financial Accounting II	3
MS 305	Management Analysis and Concepts	3
MS 311	Marketing	3
MS 312	Managerial Accounting	3
MS 313	Personnel Management	3
MS 315	Finance	3
MS 316	Psychology of Management	3
MS 318	Business Data Processing	3
MS 319	Management Information Systems	3
MS 390	Business Law	3
TOTAL		90

15 credit hours from the A list of courses

### A LIST

COURSE NUMBER/TITLE	CREDITS	
AS 303	Government and Aviation	3
AS 405	Aviation Law	3
AS 409	Aviation Safety	3
AS 412	Corporate and Business Aviation	3
EC 420	Economics of Air Transportation	3
MS 322	Aviation Insurance	3
MS 405	General Aviation Marketing	3
MS 408	Airport Management	3
MS 410	Management of Air Cargo	3
MS 412	Airport Planning and Design	3
MS 425	Trends and Current Problems in Air Transportation	3

15 credit hours from the remaining A list courses or from the B list

### B LIST

COURSE NUMBER/TITLE	CREDITS	
CS 216	Structured Programming	3
CS 218	COBOL Programming	3
CS 312	Assembly Language Programming	3
CS 320	Advanced COBOL Programming	3
EC 340	Managerial Economics	3
MS 331	Transportation Principles	3
MS 401	Management Planning and Control	3
MS 419	Aviation Maintenance Management	3
MS 420	Industrial Management	3
MS 421	Small Business Management	3
MS 430	Management Applications	3
CE (AM)	Aviation Management Cooperative Education	12
	Open Electives	12
TOTAL		132

Students enrolled in the Army or Air Force ROTC program may substitute MY or AF courses for the open elective courses.

## ASSOCIATE IN SCIENCE

The Associate in Science in Aviation Management degree requires 60 credit hours of core courses plus 6 credits in AS, EC, or MS courses.

### CORE

COURSE NUMBER/TITLE	CREDITS
AS 101 History of Aviation OR	
SS 110 World History OR	
SS 120 American History	3
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 120 Quantitative Methods I	3
MA 220 Quantitative Methods II	3
MA 222 Business Statistics OR	
MA 211 Statistics With Aviation Applications	3
PS Elective	3
SS 220 Introduction to Psychology	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 212 Financial Accounting II	3
MS 305 Management Analysis and Concepts	3
MS 313 Personnel Management	3
MS 316 Psychology of Management	3
MS 318 Business Data Processing	3
	—
<b>TOTAL</b>	<b>60</b>

In addition, 6 credit hours from the following list of courses must be completed.

COURSE NUMBER/TITLE	CREDITS
AS 303 Government and Aviation	3
AS 405 Aviation Law	3
AS 409 Aviation Safety	3
AS 412 Corporate and Business Aviation	3
EC 420 Economics of Air Transportation	3
MS 322 Aviation Insurance	3
MS 405 General Aviation Marketing	3
MS 408 Airport Management	3
MS 410 Management of Air Cargo	3
MS 412 Airport Planning and Design	3
MS 425 Trends and Current Problems in Air Transportation	3
	—
<b>TOTAL</b>	<b>66</b>



# General Aeronautics

Associate

## INTRODUCTION

The Associate in General Aeronautics degree program is limited to students who have military training which is recommended for credit by the American Council on Education. The program provides a mix of general, liberal arts and aviation-related courses to augment the servicemember'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.

## SPECIAL ADMISSION REQUIREMENTS

Admission to the General Aeronautics degree program is limited to veterans and current members of the military service. 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:

COURSE NUMBER/TITLE	CREDITS
AS 100 Foundations of Aeronautics	4
AS 101 History of Aviation	3
AS Electives	6
CS 105 Introduction to Computers in Aviation OR	
CS 109 Introduction to Computer Programming w/ BASIC	3
EC Elective	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 221 Technical Report Writing	3
HU Elective	3
MA 111 College Math for Aviation I	3
MS 105 American Business Enterprise	3
MS 305 Management Analysis and Concepts	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

The Associate in Science in Aviation Management degree requires 60 credit hours of core courses plus 6 credits in AS, EC, or MS courses.

### CORE

COURSE NUMBER/TITLE	CREDITS
AS 101 History of Aviation OR	
SS 110 World History OR	
SS 120 American History	3
CS 109 Introduction to Computer Programming w/BASIC OR	
CS 110 FORTRAN Programming	3
EC 210 Microeconomics	3
EC 211 Macroeconomics	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 220 Communications III	3
HU 221 Technical Report Writing	3
MA 120 Quantitative Methods I	3
MA 220 Quantitative Methods II	3
MA 222 Business Statistics OR	
MA 211 Statistics With Aviation Applications	3
PS Elective	3
SS 220 Introduction to Psychology	3
MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 212 Financial Accounting II	3
MS 305 Management Analysis and Concepts	3
MS 313 Personnel Management	3
MS 316 Psychology of Management	3
MS 318 Business Data Processing	3
	—
<b>TOTAL</b>	<b>60</b>

In addition, 6 credit hours from the following list of courses must be completed.

COURSE NUMBER/TITLE	CREDITS
AS 303 Government and Aviation	3
AS 405 Aviation Law	3
AS 409 Aviation Safety	3
AS 412 Corporate and Business Aviation	3
EC 420 Economics of Air Transportation	3
MS 322 Aviation Insurance	3
MS 405 General Aviation Marketing	3
MS 408 Airport Management	3
MS 410 Management of Air Cargo	3
MS 412 Airport Planning and Design	3
MS 425 Trends and Current Problems in Air Transportation	3
	—
<b>TOTAL</b>	<b>66</b>

# General Aeronautics

Associate

## INTRODUCTION

The Associate in General Aeronautics degree program is limited to students who have military training which is recommended for credit by the American Council on Education. The program provides a mix of general, liberal arts and aviation-related courses to augment the servicemember'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.

## SPECIAL ADMISSION REQUIREMENTS

Admission to the General Aeronautics degree program is limited to veterans and current members of the military service. 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:

COURSE NUMBER/TITLE	CREDITS
AS 100 Foundations of Aeronautics	4
AS 101 History of Aviation	3
AS Electives	6
CS 105 Introduction to Computers in Aviation OR	
CS 109 Introduction to Computer Programming w/ BASIC	3
EC Elective	3
HU 120 Communications I	3
HU 121 Communications II	3
HU 221 Technical Report Writing	3
HU Elective	3
MA 111 College Math for Aviation I	3
MS 105 American Business Enterprise	3
MS 305 Management Analysis and Concepts	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

# *Professional Aeronautics*

**Bachelor  
Associate**

## **INTRODUCTION**

The Professional Aeronautics degree program was conceived and developed for the individual who has already acquired a body of aviation knowledge in an identifiable set of aviation skills through experience or a combination of training and experience. The curricula of the associate and bachelor programs are designed to build on this specialized core of knowledge and experience. In addition to the general education requirements, the degrees provide required and elective courses to prepare the student for career growth and increased responsibility.

## **SPECIAL ADMISSION REQUIREMENTS**

Admission to Professional Aeronautics is restricted to individuals who possess an aviation skill or skills as identified under the areas of concentration listed on the following pages.

## **ADVANCED STANDING**

Aeronautical Technology credit will be granted enrolled students for completion of the training and experience specified by the University for the various approved areas of concentration. The number of credits granted depends upon the combination of professional credentials, qualifications, and the length and level of experience.

Subsequent enrollment in courses related to the aeronautical specialty for which aeronautical technology credit has been granted is inconsistent with the philosophy of the Professional Aeronautics degree. Credit for courses of this type will not be applied toward the requirements for the degree.

## **AREAS OF CONCENTRATION**

The approved areas of concentration, specific qualifications and the range of credit hours available are as follows:

### **Aircraft Dispatcher (48 Credit Hours):**

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

### **Airline Command Pilot (64 Credit Hours):**

This Area of Concentration is open to individuals who possess the following qualifications and experience: (1) have a record of employment as a pilot by a major airline and qualified to fly as captain; (2) an FAA Airline Transport Pilot Certificate with at least one type rating in a

current air carrier aircraft; and (3) a minimum of 5,000 flight hours as pilot-in-command or second-in-command in aircraft with a maximum certified gross takeoff weight of more than 70,000 pounds.

**Airways Facilities Technology (64 Credit Hours):**

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

**Air Carrier Pilot (48 Credit Hours):**

Individuals with a record of employment by a major airline (an airline required to operate 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.

**Air Traffic Control Technology (64 Credit Hours):**

Technicians who have attained journeyman level qualifications as flight service specialists, enroute air traffic controllers, or terminal air traffic controllers.

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

Individuals who possess an FAA Airframe and Powerplant Certificate, 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 turbined powered, pressurized and operated by a corporation.

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

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

**Aviation Safety Technology (64 Credit Hours):**

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

**Certified Flight Instructor (18 Credit Hours):**

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

**Commuter Airline Pilot (32 Credit Hours):**

Individuals who (1) have a record of employment by an air carrier registered with the CAB under Part 298 and hold FAA operating certificates under Part 135; (2) hold an FAA Airline Transport Pilot Certificate with a Multi-Engine rating; and (3) have a current Part 135 pilot-in-command flight check.

**Corporate Pilot (48 Credit Hours):**

Individuals with a record of employment as a pilot in corporate aviation, who possess a type rating, and have a minimum of 1,000 hours as pilot-in-command or second-in-command in turbine-powered aircraft.

**Electronic Operations/Maintenance Technology (32 Credit Hours):**  
Individuals who have attained supervisory level in an approved aviation electronics specialty.

**Flight Technology (48 Credit Hours):**  
Rated military aviators/pilots (36 months OJT).

**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)
- Navigator Bombardier (48 credit hours)
- Weapons Systems Officer (48 credit hours)

Specialist/Technicians who have completed requisite military and defense department schooling and experience in the approved areas of concentration listed below are eligible for 18 semester hours of aeronautical technology credit. Those who have attained supervisory level and meet schooling and experience requirements may be granted 32 aeronautical technology credits.

- Aircraft Maintenance
- Aviation Weather
- Electronic Operations/Maintenance
- Flight Operations Administration
- Flight Simulation Operations

## **DEGREE REQUIREMENTS**

### **Bachelor of Professional Aeronautics**

Including the aeronautical technology credits granted on the basis of professional qualifications, the Bachelor degree requires 129 credit hours. The curriculum provides study opportunities in the humanities, social sciences, mathematics, physical sciences, computer science, aeronautical science, economics and management. Specific course requirements are listed on the curriculum page that follows.

### **Associate in Professional Aeronautics**

Qualification for one of the approved areas of concentration and the equivalent of three trimesters of study may be combined to complete the Associate degree. At least 65 credit hours including the aeronautical technology credit awarded for professional qualifications are required for the degree. Study embraces the humanities, social sciences, physical sciences, mathematics, computer science, economics and management.

For those who qualify for 32 or more aeronautical technology credits, 27 may be applied to the Associate degree, 18 credits in aeronautical technology and 9 credits as general electives.

Candidates who qualify for the Aircraft Maintenance area of concentration may elect to take the Type 65 series of AMT courses. (AMT 200, AMT 270, AMT 280, AMT 370, AMT 380) totaling 20 credit hours. Selection of this option necessitates the following modification to the standard curriculum listed in the first column on the Curriculum Page.

1. AS 303 course requirement deleted.
2. AMT 370 and AMT 380 are utilized as specified electives.
3. AMT 200, AMT 270, and AMT 280 are utilized as general electives.

The resulting total requirement for the Associate degree is 71 credit hours.

## ASSOCIATE AND BACHELOR CURRICULUM

The curriculum to be followed by each student depends upon the amount of aeronautical technology credit granted in the approved area of concentration. The curriculum listed below is organized according to the different amounts of aeronautical technology credit normally available.

The credit awarded in an approved area of concentration encompasses all related training and experience completed by the student. Training and experience in unrelated specialties will be evaluated in accordance with advanced-standing procedures described elsewhere in the catalog. For example, a candidate who qualifies for the air carrier pilot area of concentration will not be granted additional advanced standing credit for related aeronautical science and flight technology courses. The policy of not granting duplicate credit applies in this and other similar instances.

Following is an outline of the several curricular requirement tracks based upon the amount of aeronautical technology credit granted. The column on the left identifies the Associate degree curriculum and the other four columns are applicable to the Bachelor degree.

CURRICULUM	Associate		Bachelor		
AERONAUTICAL TECHNOLOGY CREDIT					
(lower level)	18	18	22	33	44
(For Professional Qualifications) (upper level)			10	15	20
AERONAUTICAL SCIENCE					
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
AS 409 Aviation Safety			3	3	
HUMANITIES AND SOCIAL SCIENCES					
Communication Skills: English Composition and rhetoric, composition and literature, speech and creative writing courses. At least one course must be in English Composition.			6	9	9
			6	6	6

HU 221 Technical Report Writing	3	3	3	3	3
Electives: sociology, psychology, history, philosophy, political science, music, art and literature. A maximum of 6 credits may be in any one discipline.	3	9	9	6	6
Upper Division Electives		6	3	3	
<b>COMPUTER SCIENCE/MATHEMATICS</b>					
CS 109 Introduction to Computer Programming w/BASIC OR					
CS 105 Introduction to Computers in Aviation	3	3	3	3	3
MA 111 College Math for Aviation I	3	3	3	3	3
MA 112/211 College Math for Aviation II/Statistics with Aviation Applications		3	3	3	3
<b>PHYSICAL SCIENCES</b>					
Physical Science, chemistry, physics, earth science, astronomy, geology, biology, zoology and physiology courses.	3	6	6	6	6
<b>ECONOMICS/MANAGEMENT</b>					
*EC 211 Macroeconomics	3	3	3	3	3
EC 210 Microeconomics		3	3	3	3
MS 210 Financial Accounting I		3	3	3	3
MS 105 American Business Enterprise	3	3	3	3	3
MS 305 Management Analysis and Concepts	3	3	3	3	3
SPECIFIED ELECTIVES: (select from list)	2	27	19	15	11
AS 307 Flight Physiology					
AS 309 Basic Aerodynamics					
AS 310 Aircraft Performance					
AS 401 Airport Development and Operations					
AS 409 Aviation Safety					
AS 410 Air Carrier Operations					
AS 412 Corporate and Business Aviation					
MS 212 Financial Accounting II					
MS 311 Marketing					
MS 313 Personnel Management					
MS 315 Finance					
MS 316 Psychology of Management					
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	0
<b>TOTAL</b>	<b>65</b>	<b>129</b>	<b>129</b>	<b>129</b>	<b>129</b>

\*Either EC 211 or EC 210 satisfies the requirements of the Associate degree curriculum.



# FLIGHT PROGRAMS

## *Aeronautical Science*

### *Aeronautical Studies*

Air Force Aerospace Studies (AFROTC)  
Airport Management  
Air Traffic Control  
Air Transportation Management  
Aviation Maintenance Technology  
Avionics  
Computer Science  
Engineering Science  
Flight – Fixed Wing  
Flight – Rotary Wing  
Management  
Military Science (Army ROTC)  
Radiotelephone Maintenance Technology

### *Aviation Safety*

## *Aeronautical Science*

Bachelor of Science  
Associate in Science

## ADMISSION REQUIREMENTS

Students must meet the general University Requirements for admission and the age and physical qualifications for a flight training program, as outlined in the Admission to the University Chapter of this Catalog.

## REQUIRED FLIGHT COURSES

See the Academic Regulations and Procedures Chapter of this Catalog for information concerning University policies with respect to flight courses.

## DEGREE REQUIREMENTS

The Bachelor of Science degree in Aeronautical Science may be attained in eight trimesters. To earn the degree, a minimum of 131 credits 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 Single-Engine and Instrument ratings.

COURSE NUMBER/TITLE	CREDITS
*AS 100 Foundations of Aeronautics	4
*AS 101 History of Aviation	3
*AS 102 Navigation I	3
*AS 103 Flight Rules & Regulations	3
*AS 201 Meteorology	3
*AS 202 Navigation II	3
*AS 203 Aircraft Engines - Reciprocating	3
*AS 210 Aircraft Systems and Components	3
*AS 303 Government and Aviation	3
*AS 307 Flight Physiology	2
*AS 309 Basic Aerodynamics	3
AS 310 Aircraft Performance	3
AS 311 Aircraft Engines - Turbine	3
AS 408 Flight Safety	3
AS Upper Level Electives (Taken from AS 401, 404, 405, 406, 410, 412)	12
AV 301 Avionics for Aviators	3
CS 109 Introduction to Computer Programming W/BASIC	3
EC 210 Microeconomics	3
*EC 211 Macroeconomics	3
EC/MS Upper Level Electives	6
*FA 104 Primary Flight	2
*FA 105 Private Pilot Certification	2
*FA 205 Basic Attitude Instrument and Advanced Flight Maneuvering	2
*FA 206 Instrument Flight Transition	2
*FA 302 Commercial Pilot Certification	2
FA Upper Level Flight Elective	1
*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
*MA 111 College Math for Aviation I	3
*MA 112 College Math for Aviation II	3
*MS 105 American Business Enterprise	3
MS 210 Financial Accounting I	3
MS 305 Management Analysis and Concepts	3
*PS 101 Basic Chemistry	3
*PS 103 Technical Physics I	3
*PS 104 Technical Physics II	3
*SS 220 Introduction to Psychology	3
General Electives	6
<b>TOTAL</b>	<b>131</b>

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

## 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.

### *Aircraft Dispatcher Certification Program*

#### INTRODUCTION

For the student interested in airline flight operations management, Embry-Riddle offers a program of instruction designed to prepare the student for Aircraft Dispatcher Certification testing. The FAA awards the Aircraft Dispatcher Airman Certificate to graduates of the approved program upon successful completion of a standardized written examination and a practical test.

Licensed dispatchers are employed by all non-commuter airlines to manage the ground-based tasks vital to the successful execution of an airline flight. Dispatchers share responsibility with the captain for preflight planning and preparation of the dispatch release, and they are included in the decision loop involving equipment failures, weather variations, or traffic delays encountered during the flight. In addition, they are responsible for monitoring the progress of the flight, issuing safety-of-flight information to the crew, and canceling or redispersing the flight, if they or the captain deem it necessary.

To properly carry out these tasks, dispatchers must be knowledgeable in aircraft performance capabilities, meteorology, operating regulations, air traffic control, and instrument flight procedures. Furthermore, they must be able to make sound judgments incorporating company economic and scheduling considerations.

#### CERTIFICATION REQUIREMENTS

The Aircraft Dispatcher Certification Program is built upon Aeronautical Science courses and does not constitute a separate degree program. Dispatcher preparation is predicated upon the successful completion of the following Aeronautical Science courses with 100 percent attendance required.

AS 100 Foundations of Aeronautics

AS 102 Navigation I  
AS 103 Flight Rules and Regulations  
AS 201 Meteorology I  
AS 202 Navigation II  
AS 203 Aircraft Engines —Reciprocating  
AS 210 Aircraft Systems and Components  
AS 310 Aircraft Performance  
AS 311 Aircraft Engines-Turbine  
AS 410 Air Carrier Operations

AS 410 is an elective course in the Aeronautical Science curriculum and serves as the capstone to the Dispatcher Program.

In order to credit any of the courses listed above toward the Aircraft Dispatcher Certification Program, the student must enroll in the program prior to taking the courses and must maintain a record of 100 percent attendance throughout the course.

## *Aeronautical Studies*

**Bachelor of Science  
Associate in Science**

### **ADMISSION REQUIREMENTS**

General University admission requirements apply, except in the case of the student selecting flight as an Area of Concentration. In this instance, the age and physical qualifications for flight students listed in the Admission to the University Chapter apply.

### **DEGREE REQUIREMENTS**

The Bachelor of Science Degree in Aeronautical Studies may be earned in eight trimesters. A minimum of 131 trimester credit hours is required.

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

Aeronautical Science  
Computer Science  
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

Air Force Aerospace Studies (AFROTC)  
Airport Management  
Air Traffic Control  
Air Transportation Management  
Aviation Maintenance Technology  
Avionics  
Computer Science  
Engineering Science  
Flight — Fixed Wing  
Flight — Rotary Wing  
Management  
Military Science (Army ROTC)  
Radiotelephone Maintenance Technology

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

## CORE CURRICULUM

COURSE NUMBER/TITLE	CREDITS
*AS 100 Foundation of Aeronautics	4
*AS 101 History of Aviation	3
*AS 102 Navigation I	3
*AS 103 Flight Rules and Regulations	3
*AS 201 Meteorology I	3
*AS 211 Aircraft Engines and Systems	3
*AS 303 Government and Aviation	3
*AS 307 Flight Physiology	2
AS 405 Aviation Law	3
AS 409 Aviation Safety	3
*CS 109 Introduction to Computer Programming w/ BASIC	3
*EC 210 Microeconomics	3
*EC 211 Macroeconomics	3
*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 OR	
HU 340 Introduction to Philosophy	3
HU/SS Elective (300-400 level)	6
*MA 111 College Math for Aviation I	3
*MA 112 College Math for Aviation II	3
*MS 105 American Business Enterprise	3
*MS 210 Financial Accounting I	3
*MS 305 Management Analysis and Concepts	3
*PS 101 Basic Chemistry	3
*PS 102 Exploration in Physics	3

*SS 110	World History OR	
SS 120	American History	3
*SS 220	Introduction to Psychology	3
		—

TOTAL CORE COURSES 87

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

## AREAS OF CONCENTRATION

### Air Force Aerospace Studies

This program provides the individual with the background to enter the Air Force as a military officer. Completion of this program allows the graduate to be a more informed officer in the U.S. Air Force.

COURSE NUMBER/TITLE	CREDITS
AF 101 U.S. Military Forces	1
AF 102 U.S. Military Forces	1
AF 201 The Development of Air Power	1
AF 202 The Development of Air Power	1
AF 301 Air Force Management and Leadership	3
AF 302 Air Force Management and Leadership	3
AF 401 National Security Forces in Contemporary American Society	3
AF 402 National Security Forces in Contemporary American Society	3
Electives approved by AFROTC Professor of Air Force Aerospace Studies (300-400 level)	12
Technical or MS Electives	17
	—
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.

COURSE NUMBER/TITLE	CREDITS
AS 401 Airport Development and Operations	3
EC 310 Labor Economics	3
MA 211 Statistics w/Aviation Applications	3
MS 212 Financial Accounting II	3
MS 313 Personnel Management	3
MS 331 Transportation Principles	3
MS 390 Business Law	3
MS 408 Airport 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(AM)	Airport Management Cooperative Education OR EC/MS Upper Level Electives	12

## Air Traffic Control

The Air Traffic Control Area of Concentration provides students who meet FAA eligibility requirements with an opportunity to gain on-the-job experience in air traffic control while earning college credit. Prior to selecting this Area of Concentration, students should contact the Career Center for details concerning the physical and psychological standards required by the FAA in order to be eligible to participate.

COURSE NUMBER/TITLE	CREDITS	
*AS 100	Foundations of Aeronautics	4
*AS 102	Navigation I	3
*AS 103	Flight Rules and Regulations	3
*AS 201	Meteorology I	3
AS 202	Navigation II	3
*AS 211	Aircraft Engines and Systems	3
*AS 303	Government and Aviation	3
*AS 307	Flight Physiology	2
AS 360	Introduction to Air Traffic Control	3
AS 361	Enroute/Terminal Non-Radar Air Traffic Control	3
AS 396	Air Traffic Control Practicum I	9
AS 401	Airport Development and Operations	3
*AS 405	Aviation Law	3
*AS 409	Aviation Safety	3
AS 497	Air Traffic Control Practicum II	9
AV 301	Avionics for Aviators	3
*CS 109	Introduction to Computer Programming w/BASIC	3
CS 216	Structured Programming	3
CS	Elective	3
*EC 210	Microeconomics OR	
EC 211	Macroeconomics	3
*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 OR	
HU 340	Introduction to Philosophy	3
*HU/SS	Electives (300-400 level)	3
*MA 111	College Mathematics for Aviation I	3
*MA 112	College Mathematics for Aviation II	3
*MS 105	American Business Enterprise	3
*MS 210	Financial Accounting I	3
*MS 305	Management Analysis and Concepts	3
MS 308	Public Administration	3
MS	Elective	3
*PS 102	Explorations in Physics	3

*PS	Elective	3
*SS 110	World History OR	
SS 120	American History OR	
AS 101	History of Aviation	3
*SS 220	Introduction to Psychology	3
	Open Electives	9
TOTAL		132

\*Core Courses

### 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.

COURSE NUMBER/TITLE	CREDITS
EC 310 Labor Economics	3
EC 420 Economics of Air Transportation	3
MA 211 Statistics w/Aviation Applications	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
CE(AM) Aviation Management Cooperative Education OR EC/MS Upper Level Electives	12

### Aviation 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.

#### Type 147 AMT Program

(Available only to students at the Daytona Beach Campus. For a listing of courses required in the Type 147 AMT program, see the Aviation Maintenance Management Degree with the Type 147 AMT Option in the Aviation Management section of this chapter.)

For this Area of Concentration, students complete the Type 147 AMT program (60 credit hours) plus 9 credit hours of Upper Level Open Electives in addition to the Core program. A total of 156 credit hours is required for the degree.



**TYPE 65 AMT Program**

(Available only to students at International Campus locations.)

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
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 and Applications	4
Designated Electives	16
AMT/AS/AV/CS/EL/FA/MS	
(At least nine of these credits must be upper level)	
OR	
AMT 355 Aircraft Maintenance Practicum	8
AMT 455 Advanced Aircraft Maintenance Practicum	8
Open electives (upper level)	9
<b>TOTAL</b>	<b>45</b>

**Avionics**

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

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
EL 101 Basic Electronic 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 221 Introduction to Pulse and Digital Circuits	4
EL 222 Basic Electronic Circuits & Systems	4
EL 321 Advanced Digital Circuits & Systems	4
EL 322 Advanced Electronic Circuits and Systems	4
AV 311 Aircraft Communication and Navigation Systems	3
AV 321 Aircraft Pulse Systems	3
AV 322 Aircraft Radar & Autopilot Systems	3
AV 340 Avionics Equipment Troubleshooting and Repair Lab	2
AV 341 Advanced Avionics Equipment Troubleshooting and Repair Lab	2
General Electives	1
*PS 103 Technical Physics I	3

\*Replaces PS 102 in the Core Program.

## Computer Science

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.

COURSE NUMBER/TITLE	CREDITS
CS 110 FORTRAN Programming	3
CS 216 Structured Programming	3
CS 218 COBOL Programming	3
CS 312 Assembly Language Programming	3
CS 320 Advanced COBOL with Aviation Applications	3
CS 410 Data Structures	3
CS 420 Operating Systems	3
CS Electives (300-400 level)	3
*MA 120 Quantitative Methods I	3
*MA 220 Quantitative Methods II	3
MA 222 Business Statistics	3
MS 318 Business Data Processing	3
MS 319 Management Information Systems	3
General Electives	12

\*Replace MA 111 and MA 112 in the core program.

## Engineering Science

This area gives the individual a base in science and technology for entering many areas of the aviation industry. NOTE: The student should begin work in this area in the first trimester and must have the necessary prerequisites for the designated required courses. The outline is based on the assumption that the student tests out of MA 140 and MA 141.

COURSE NUMBER/TITLE	CREDITS
CS 110 FORTRAN Programming	3
CS 360 Advance FORTRAN w/Aviation Applications	3
ES 201 Statics	3
ES 302 Solid Mechanics	3
ES 304 Fluid Mechanics	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
*PS 201 Engineering Physics I	5
PS 202 Engineering Physics II	5

AE/ES	Upper Level Electives	9
	Open Electives	8

\*Replace MA 111, MA 112, and PS 102 in the Core Program.

### 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 Single-engine ratings.

COURSE NUMBER/TITLE	CREDITS	
AS 202	Navigation II	3
*AS 203	Aircraft Engines - Reciprocating	3
AS 210	Aircraft Systems & Components	3
AS 309	Basic Aerodynamics	3
AS 310	Aircraft Performance	3
AS 311	Aircraft Engines - Turbine	3
*AS 408	Flight Safety	3
AS	Upper Level Electives	3
AV 301	Avionics for Aviators	3
FA 104	Primary Flight	2
FA 105	Private Pilot Certification	2
FA 205	Basic Attitude Instrument and Advanced Flight Maneuvering	2
FA 206	Instrument Flight Transition	2
FA 302	Commercial Pilot Certification	2
FA	Upper Level Flight Elective	1
*PS 103	Technical Physics I	3
PS 104	Technical Physics II	3
	General Electives	9

\* Replace AS 211, AS 409 and PS 102 in the Core Program.

### Flight – Rotary Wing

Rotary wing training is not offered by the University. However, military or civilian trained rotorcraft pilots with FAA Commercial Certificates with Multi-Engine and Instrument ratings may receive credit for AS 100, AS 102, AS 103, AS 201 and AS 202 as well as FA 104, FA 105, FA 205, FA 206, and FA 340.

COURSE NUMBER/TITLE	CREDITS	
FA 104	Primary Flight	2
FA 105	Private Pilot Certification	2
FA 205	Basic Attitude Instrument and Advanced Flight Maneuvering	2
FA 206	Instrument Flight Transition	2
FA 302	Commercial Pilot Certification	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
		—
<b>TOTAL</b>		<b>44</b>

### 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.

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
EC 310 Labor Economics	3
EC 420 Economics for Air Transportation	3
MA 211 Statistics w/Aviation Applications	3
MS 212 Financial Accounting II	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	3
MS 401 Management Planning & Control	3
MS 425 Trends and Current Problems in Air Transportation	3
CE(MS) Aviation Management Cooperative Education OR EC/MS Upper Electives	12

### Military Science

Successful completion of this four-year Army ROTC program qualifies the student for commission in the U.S. Army.

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>	
MY 101 Basic Military Science	2	
MY 102 Basic Military Science	2	
MY 201 Basic Military Science	2	
MY 202 Basic Military Science	2	
MY 301 Advanced Military Service	2	
MY 302 Advanced Military Science	2	
MY 401 Advanced Military Science	2	
MY 402 Advanced Military Science	2	
	Electives (Upper Division)	12
	Technical or MS Electives	17
<b>TOTAL</b>	<b>45</b>	

## **Radiotelephone Maintenance Technology**

The Radiotelephone Maintenance Technology program offered at European (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, in part, to assist experienced electrical/electronics personnel prepare for the Federal Communications Commission General Class Radiotelephone Operator's License.

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
EL 101 Basic Electronic Concepts & D-C Circuits	4
EL 102 Fundamental of A-C and A-C Analysis	4
EL 103 Semiconductor Fundamentals	4
EL 207 Basic Radiotelephone Equipment Theory and Operation	3
EL 221 Introduction to Pulse and Digital Circuits	4
EL 222 Basic Electronic Circuits & Systems	4
EL 321 Advanced Digital Circuits & Systems	4
EL 322 Advanced Electronic Circuits & Systems Upper Level Electives	4 14

## **ASSOCIATE IN SCIENCE DEGREE AERONAUTICAL STUDIES**

The courses required for the Associate in Science in Aeronautical Studies are indicated on the Core Curriculum with an asterisk (\*). This curriculum requires 75 credit hours.

### ***Aviation Safety***

#### **Associate in Science**

### **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 applications. The Safety of Flight (SF) courses in this program are available only at certain International Campus locations.

### **DEGREE REQUIREMENTS**

The Associate in Science in Aviation Safety may be completed in the equivalent of four trimesters of academic study. A minimum of 67 credit hours is required.

<b>COURSE NUMBER/TITLE</b>	<b>CREDITS</b>
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 I	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 190	Safety Management	2
SF 219	Aviation Psychology	2
SF 250	Safety Program Development	3
SF 303	Introduction to Aircraft Structures	3
SF 307	Aviation Physiology	2
SF 308	Subsonic Aerodynamics	3
SF 330	Aircraft Accident Investigation	3
	General Electives (any discipline)	3
		<hr/>
TOTAL		67

# Course Descriptions

Courses numbered 100-199, 200-299, 300-399 and 400-499 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. Course numbers ending in 95 identify special courses offered on a limited time basis such as courses taught by a visiting lecturer; numbers ending in 96 or 97 identify special courses which are sequential; numbers ending in 98 identify special courses in which students are collectively given a unique program of learning activities by a supervising instructor, and numbers ending in 99 identify courses involving individual study with a one for one relationship between instructor and student.

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

AE	Aeronautical Engineering
AF	Air Force Aerospace Studies
AMT	Aviation Maintenance Technology
AS	Aeronautical Science
AV	Avionics Technology
CE	Cooperative Education
CS	Computer Science
EC	Economics
EL	Electronics Technology
ES	Engineering Science
ET	Engineering Technology
FA	Flight Academic
HU	Humanities
MA	Mathematics
MS	Management Science
MY	Military Science
PS	Physical Science
SF	Safety of Flight
SS	Social Science

Corequisites and prerequisites may be waived by permission of the responsible department 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 the first year. Corequisite: MA 241.

**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 309 – Experimental Aerodynamics 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. Prerequisites: 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 407 – Matrix Structural Methods** **3 Credits**  
Linear algebra. Energy methods. Rod, beam and shear panel elements. Matrix structures. Substructures. Free vibrations. Prerequisite: AE 404.

**AE 408 – Turbine and Rocket Engines** **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. Prerequisites: ES 305, AE 301.

**AE 411 – Advanced Experimental Aerodynamics** **3 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 309.

**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 415 – In-Flight Laboratory** **3 Credits**  
Development of longitudinal and lateral-directional, static and dynamic stability and excess power, rate of climb, turn rate, and load factor performance theory, with laboratory concept validations. Prerequisite: AE 413.

**AE 420 – Aircraft Preliminary Design** **3 Credits**  
Airplane conceptual design principles are developed to meet modern aerodynamic, propulsion, structural and performance specifications. A complete 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. Prerequisites: AE 413, ET 110. (Computer fee required.)

**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, AE 404. (Computer fee required.)

**AE 433 – Aerodynamics of the Helicopter** **3 Credits**  
The development of rotating-wing aircraft and the helicopter. Hovering theory and vertical flight performance analysis. Autorotation, physical concepts of blade motion and control, aerodynamics and performance of forward flight. Blade stall, stability and vibration problems. Design problems. Prerequisites: 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 department chair. May be repeated with a change of content. (Computer fee required if computer used.)

## **AIR FORCE AEROSPACE STUDIES**

**AF 101 – U.S. Military Forces (General Military Course)** **1 Credit**  
Examines the role of the U.S. military in today's world, through a study of all Department of Defense forces and missions. Emphasizes the purpose, organizations, equipment and capabilities of the U.S. Air Force as they relate to the total force structure. The Leadership Laboratory exposes students to the organization and function 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 70's. The Leadership Laboratory exposes students to the function and organization of a military unit.

**AF 202 – The Development of Air Power (General Military Course) 1 Credit**

Continuation of AF 201.

**AF 301 – Air Force Management and Leadership (Professional Officers Course) 3 Credits**

A study of the managerial and leadership responsibilities of an Air Force officer. An in-depth study of those areas providing leaders with the expertise to develop and manage the human resources to achieve organizational goals. Course includes how to effectively use the communicative skills — listening, speaking and writing to effectively manage an organization. Other topics include an understanding of how behaviors, habits and attitudes, time management, and human motivation increases performance. A leadership laboratory also provides responsibility, authority and leadership experiences in line and staff positions of an organization.

**AF 302 – Air Force Management and Leadership (Professional Officers Course) 3 Credits**

Continuation of AF 301.

**AF 401 – National Security Forces in Contemporary American Society (Professional Officers Course) 3 Credits**

An examination of the professional military officer and conditions that affect civil-military relations. This includes an in-depth analysis of the international and domestic environment as it affects formulation and implementation of U.S. defense policy. Additional study involves the framework of defense policy, evolution of U.S. strategy, and the management of conflict. The course concludes with an examination of the military justice system and its implications for the professional officer. The Leadership Laboratory provides advanced leadership experiences in military officer activities.

**AF 402 – National Security Forces in Contemporary American Society (Professional Officers Course) 3 Credits**

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

## **AVIATION MAINTENANCE TECHNOLOGY**

**AMT courses designated as Type 65 are available at International Campus locations only.**

**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 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 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 202 – 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 203 – Aircraft Instruments and Communication/Navigation System** **2 Credits**  
 This course familiarizes the student with the aircraft instruments and their functions: communications and navigation equipment, including removal and installation procedures. (Lab fee required.)
- AMT 204 – 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 205 – 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 A-C and D-C electrical systems and equipment. Prerequisite: AMT 103. (Lab fee required.)

**AMT 206 – 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 207 – 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 and large aircraft. (Lab fee required.) Prerequisite: AMT 104.

**AMT 208 – 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 209 – Aircraft Reciprocating Engines 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 210 – 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 211 – 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 212 – Propellers and Propeller Systems** **3 Credits**  
 A study of the theory, operation and control of aircraft propellers and related systems. Includes methods of installation, maintenance and repair of propeller systems. (Lab fee required.)
- AMT 213 – 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 210 and 211. (Lab fee required.)
- AMT 214 – 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 209.
- AMT 215 – Turbine Engines and Turbine Engine Systems** **6 Credits**  
 A study of the theory of operation of the turbine engine and the function of the engine components. Overhaul and testing procedures are covered including disassembly, inspection, repair, reassembly and operational tests of engines and accessories. (Lab fee required.)
- AMT 216 – Aircraft Maintenance for Pilots (Formerly AMT 201)** **3 Credits**  
 A course designed to broaden the knowledge of the professional pilot and give an intimate knowledge of the airframes and powerplants of aircraft. Subject areas include the 25 items of preventive maintenance that a pilot is authorized to perform by FAR Part 43.3(h).
- AMT 270 – Airframe Structures and Applications** **4 Credits**  
 A study of aircraft wood, dope, fabric, sheet metal, 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 355 – Aircraft Maintenance Practicum** **8 Credits**  
 Enrolled students who have a minimum of 18 months on-the-job experience subsequent to technical training in an approved aircraft maintenance specialty may receive credit for this course after completion of all required Type 65 AMT course work. (This course applies only to the Type 65 AMT Program.)
- 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 are qualified for the award of AMT 355 credit and have a minimum of 30 months on-the-job experience subsequent to technical training in an approved aircraft maintenance specialty may receive credit for this course after completion of all required Type 65 AMT course work. (This course applies only to the Type 65 AMT Program.)

## **AERONAUTICAL SCIENCE**

**AS 100 – Foundations of Aeronautics**

**4 Credits**

Aerodynamics, engines, systems, Federal Aviation Regulations, navigation, meteorology, communication, Airman Information Manual, and flight physiology. The student is eligible to take the FAA Private Pilot written examination upon satisfactory completion.

**AS 101 – History of Aviation**

**3 Credits**

Overview of aviation history. Emphasis U.S. aviation industry and government regulation of it.

**AS 102 – Navigation I**

**3 Credits**

Chart development, time zones, scales, wind triangles, flight log preparation, flight planning, electronic navigation. Prerequisite: AS 100.

**AS 103 – Flight Rules and Regulations**

**3 Credits**

Parts I, 61, 71, 91, 97 and 135 of the FARs and Part 830 of the National Transportation Safety Board. Prerequisite: As 100.

**AS 201 – Meteorology I**

**3 Credits**

Atmospheric processes, cloud identification, basic stability problems, air masses, jet stream, aeronautical codes and weather maps. (Lab fee required.)

**AS 202 – Navigation II**

**3 Credits**

Aerodynamic fundamentals, attitude instrument flying, principles and limitations of flight instruments, navigation radios and facilities, ATC procedures, airway system and charts, regulations and publications related to instrument flight rules (IFR). Prerequisites: AS 102 and Private Pilot Certificate.

**AS 203 – Aircraft Engines – Reciprocating**

**3 Credits**

Mechanical relationships, components, construction, power calculations, carburetion, induction, fuel-air requirements, and federal regulations.

**AS 210 – Aircraft Systems and Components** **3 Credits**  
Electrical environmental, hydraulic, fuel, ignition and lubrication systems including theory of operation and calculations. Prerequisites: MA 112, PS 103.

**AS 211 – Aircraft Engines and Systems** **3 Credits**  
Reciprocating and gas turbine engines, power and thrust measurement, and operating principles. Oil, fuel, hydraulic, electrical and pneumatic systems. Not available to Aeronautical Science students or Aeronautical Studies students with an Area of Concentration in Flight.

**AS 303 – Government and Aviation** **3 Credits**  
Government control and regulation. Acts and Conventions. Legislative proposals and rule proposals. Effects on national defense, public interest and individual rights.

**AS 307 – Flight Physiology** **2 Credits**  
Aeromedical information. Causes, symptoms, prevention and treatment of flight environment disorders. Altitude effects, spatial disorientation, body heat imbalance, and visual anomalies. (Lab fee optional.)

**AS 309 – Basic Aerodynamics** **3 Credits**  
Incompressible flow. Airfoil theory, wing theory. Calculation of stall speed, drag and basic performance criteria. Configuration changes, high and low speed conditions. Special flight conditions. Introduction to compressible flow. Prerequisites: MA 112, PS 104.

**AS 310 – Aircraft Performance** **3 Credits**  
Aerodynamic performance of aircraft powered by reciprocating, turboprop or jet turbine engines. Stability and control, weight and balance and operating data. Prerequisite: AS 309.

**AS 311 – Aircraft Engines – Turbine** **3 Credits**  
Thrust factors, gas generators, Mach effects, diffusion, turboprops and turboprops. Prerequisite: PS 104.

**AS 360 – Introduction to Air Traffic Control** **3 Credits**  
This course provides the student with an introduction to the air traffic control system at the operational level. It describes the components of the National Airspace System with emphasis on interrelationships between enroute, terminal, tower, flight service functions and the pilot.

**AS 361 – Enroute/Terminal Non-Radar Air Traffic Control** **3 Credits**  
This course covers the basic Air Traffic Control procedures for Instrument Flight Rules (IFR) operations, separation standards, holding aircraft, departures/arrivals, and general and special controls. Students will have the opportunity to practice air traffic control skills. Prerequisite: AS 360.



**AS 396 – Air Traffic Control Practicum I** **9 Credits**  
This course consists of instruction/training conducted for a period of six months at a Federal Aviation Administration (FAA) enroute or terminal facility. It includes facility training in a non-radar environment to prepare the student for Assistant Controller Certification while being operationally productive. Prerequisites: AS 360, a satisfactory score on the FAA written examination for air traffic control program applicants and selection for an internship in accordance with criteria specified in FAA Region/Embry-Riddle Aeronautical University written agreements.

**AS 401 – Airport Development and Operations** **3 Credits**  
Managerial problems of small and medium size airports and fixed base operations. Federal, state and local obligations. Leases, internal guidelines, community relations. Prerequisite: AS 303.

**AS 404 – Principles of Instruction I** **3 Credits**  
Development of a flight training syllabus, lesson plan construction, teaching methods. Application of teaching and learning fundamentals to flight maneuvers and performance evaluation.

**AS 405 – Aviation Law** **3 Credits**  
Chronological development, federal and state regulatory functions, rights and liabilities of pilots and operators. Case histories, liens and security interest in aircraft. International conferences, bilateral and multilateral agreements, criminal statutes. Prerequisite: AS 303.

**AS 406 – Principles of Instruction II** **3 Credits**  
Educational theories and techniques. Applied educational psychology. Development of methods for instrument flying instruction. Cognitive and motivational theories. Prerequisites: Commercial-Instrument Pilot Certificate, AS 404 or a CFI-Airplane Certificate.

**AS 408 – Flight Safety** **3 Credits**  
Pilot performance as influenced by attitude, motivation and perception. Ideal and practical personal and organizational safety goals and procedures. Human factors, principles of investigation, surveys of accidents. Prerequisites: AS 307, AS 309, Commercial Pilot Certificate.

**AS 409 – Aviation Safety** **3 Credits**  
Aviation safety for non-flying students. Major problem areas, program evaluation, impact of accidents on industry. Human factors, accident prevention, basic principles of investigation, case surveys of accidents. Not available to Aeronautical Science or Aeronautical Studies-Flight students.

**AS 410 – Air Carrier Operations** **3 Credits**  
Air carrier operations as related to the flight crew and dispatcher. FAR Part 121, weight and balance, manifests, planning forms, charts and graphs, performance considerations. Prerequisites: AS 103, AS 201, AS 202, AS 310.

**AS 412 – Corporate and Business Aviation** 3 Credits  
Operation of a corporate flight department. Value of management mobility. Aircraft and equipment evaluation, maintenance, flight operations, administration, fiscal considerations.

**AS 497 – Air Traffic Control Practicum II** 9 Credits  
This course is a continuation of training received in AS 396 and is preceded by an intervening period of full-time campus study. The course is conducted for a period of six months at an FAA enroute or terminal facility. The student will demonstrate the ability to actually control aircraft in a live environment. Upon satisfactory completion of the course, the student will have attained qualification and certification on a non-radar control position of operation and may be eligible for Civil Service appointment to the FAA when baccalaureate degree requirements are completed. Prerequisites: AS 361, AS 396 and selection in accordance with criteria specified in FAA Region/Embry Riddle Aeronautical University written agreements.

**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 department and program chairs. May be repeated with a change of subject.

## 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 radio wave propagation, VHF communication and VOR navigation systems, instrument landing system, automatic direction finder, distance measuring equipment, transponder, weather radar and area navigation systems.

**AV 311 – Aircraft Communications and Navigation Systems** 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. Prerequisites: EL 222 and EL321.

**AV 321 – Aircraft Pulse Systems** 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 222 and EL 321.

**AV 322 – Aircraft Radar and Autopilot Systems** **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: AV 311 and AV 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.) Corequisites: AV 311, 321.

**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 while working in E-RAU's FAA certified Avionics Repair Station will repair and return to service airworthy avionics equipment. (Lab fee required.) Prerequisite: AV 340.

## COOPERATIVE EDUCATION

**CE – 296, 297** **3 to 6 Credits**  
Aeronautical Engineering (AE), Aircraft Engineering Technology (ET), Aviation Management (AM), Avionics (AV), Computer Science (CS), 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 – 396, 397** **3 to 6 Credits**  
Continuation of CE – 296, 297

**CE – 496, 497** **3 to 6 Credits**  
Continuation of CE – 396, 397

## COMPUTER SCIENCE

**CS 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 the fundamentals of word processing and the development of touch typing, with speed and accuracy. (Lab fee required).

- CS 102 – Word Processing Concepts and Techniques** 1 Credit  
Introduces students to the fundamentals of keyboard operations and word processing and provides familiarity with various word processing equipment and software. (General elective credit only; not creditable as a computer science elective.)
- CS 103 – Word Processing File Organizations/  
Revisions** 1 Credit  
Introduces students to the fundamentals of file organizations utilized in word processing systems and develops skills in word processing operations and concepts including data manipulations, storage and sorting. (General elective credit only; not creditable as a computer science elective.)
- CS 104 – Word Processing Advanced Techniques** 1 Credit  
Advanced techniques in word processing operations including data base creation and maintenance, mathematical applications and production of documents and manuscripts. (General elective credit only; not creditable as a computer science elective.)
- CS 105 – Introduction to Computers in Aviation** 3 Credits  
Diverse exposure to the digital computer and its uses and capabilities as a management tool in the aviation field. Topics include basic introduction to systems analysis and management information systems. Contrasts hardware capabilities, programming requirements, and systems analysis and planning.
- CS 109 – Introduction to Computer Programming  
with BASIC** 3 Credits  
Concepts of algorithms, computers, and programming. Hands-on computer programming in BASIC. Student develops an appreciation for the kinds of tasks that can (or cannot) be performed by the computer, and the types of analysis and programming necessary to achieve desired results. (Lab fee required.)
- CS 110 – FORTRAN Programming** 3 Credits  
Introduction to programming in FORTRAN, flowchart, assignment, input/output, flow of control, looping, arrays, subprograms, sorting and searching, batch and interactive computing. (Lab fee required.) Corequisite: MA 111 or MA 120 or MA 140.
- CS 210 – Scientific Programming** 3 Credits  
An introduction to the use of computers, specifically for engineering students. Problems covered are typical engineering computations using FORTRAN. Required only for Aeronautical Engineering and Aircraft Engineering Technology majors. Credit will be granted only for CS 110 or CS 210, not both. (Lab fee required.) Prerequisite: MA 241.
- CS 216 – Structured Programming** 3 Credits  
Introduction to structured programming and emphasis on the fundamental control structures of sequence, selection and iteration, functions and procedures. Data structures include standard data types, user defined data types, and structured data types including

arrays, records, sets and files. The philosophy of top-down programming is emphasized throughout the course. (Lab fee required.) Prerequisites: CS 109 or CS 110.

**CS 218 – COBOL Programming** **3 Credits**

A first course in the use of the COBOL language giving a firm foundation in the concepts of structured programming design and structured COBOL programming. It will provide the capability of solving a wide range of business-type problems using the language. The structured design methodologies used in this course are based upon top-down design, functional decomposition, pseudocode, and structured walkthrough. Topics include introduction to structured programming and design, input/output operations, arithmetic functions, report editing, comparing nested IF statements, control breaks-single and multiple level, and table processing. Commercial aviation examples are used. (Lab fee required.) Prerequisites: CS 109 or CS 110.

**CS 220 – Digital Logic and Computer Operation** **3 Credits**

Number systems, Boolean Algebra, logic gates, design and set theory, analysis of digital circuits, digital components and introduction to computer operation. Prerequisites: CS 109 or CS 110 and MA 111 or MA 120 or MA 140.

**CS 301 – Introduction to Discrete Structures** **3 Credits**

An introduction to the fundamental algebraic, logical, and combinatoric concepts of mathematics and logic needed in subsequent computer science courses. Attention will be focused on learning to formulate an algorithm in some mathematical form and the concise description of computable sets. Application of graph theory in airline scheduling systems. Prerequisites: CS 109 or CS 110, and MA 112 or MA 220 or MA 241.

**CS 312 – Assembly Language Programming** **3 Credits**

Symbolic coding techniques at the machine language level. Computer architecture, addressing techniques, interrupt processing. Student develops an understanding of actual operation of a computer code, through hands-on testing. (Lab fee required.) Prerequisites: CS 109 or CS 110, and CS 220 or permission of the department chair.

**CS 318 – Advanced BASIC Programming with Aviation Applications** **3 Credits**

Heavy 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: CS 109.

**CS 320 – Advanced COBOL with Aviation Applications** **3 Credits**

Emphasis is placed on designing and writing programs using structured programming concepts. Topics include sorting multiple input files, sequential file processing — data editing and updating, indexed sequential access method and random updating. Programs

are implemented using an indexed sequence access method. (Lab fee required.) Prerequisite: CS 218.

**CS 330 – Systems Design and Documentation** 3 Credits  
Introduction to system development cycle and the techniques and problems of planning, analysis, design, implementation, documentation, and evaluation of an information system. Projects include airline reservation and scheduling systems. (Lab fee required.) Prerequisite: CS 216 or CS 218.

**CS 335 – Introduction to Computer Graphics** 3 Credits  
Introduction to computer graphics, algorithms, graphics programming, graphics design, use of graphics packages, and applications of computer graphics to aviation business and scientific problems. (Lab fee required.) Prerequisites: CS 301 or CS 312.

**CS 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 along with statistics. (Lab fee required.) Prerequisites: CS 109 or CS 110, CS 216, CS 350 and MA 211 or MA 222.

**CS 350 – Computer Modeling of Aeronautical Systems** 3 Credits  
Applications of linear programming including queuing and Monte Carlo simulations. (Lab fee required.) Prerequisites: CS 301 and MA 211 or MA 222 or MA 412.

**CS 360 – Advanced FORTRAN with Aviation Applications** 3 Credits  
Techniques in data reduction, modular programming at the systems level, array manipulation. Practical applications in applied programming. (Lab fee required.) Prerequisites: CS 301 and CS 110 or CS 210.

**CS 370 – Computer Organization** 3 Credits  
Computer system organization to include processors, memory, input/output and transfer of information. Examples of conventional machine level architecture to include instruction formats, addressing, instruction types, representation of data and flow of controls, microprogramming level, operating system level, and the assembly language level. Prerequisites: CS 301 and CS 312.

**CS 372 – Introduction to Microprocessors** 3 Credits  
Basic concepts including the architecture of a CPU, instruction register and decoder, address registers, arithmetic/logic unit, control circuitry, processor selection, design consideration of the system, hardware, and software. Microprocessor memories including RAM, static and dynamic RAM, ROM, and shift registers, microprogramming topics including interrupt and reentrant code. (Lab fee required.) Corequisite: CS 220.

**CS 410 – Data Structures** **3 Credits**

Basic concepts of data: linear lists, strings, arrays, orthogonal lists. Ordering or sorting techniques. Recursion, string and list processing languages. Airline reservation systems used as a course project. (Lab fee required.) Prerequisites: CS 216 and CS 301.

**CS 420 – Operating Systems** **3 Credits**

Development, structure, and functions of operating systems. Demand service models. Development of concurrent programs. Prerequisites: CS 312 and CS 410.

**CS 430 – Numerical Analysis** **3 Credits**

Numerical solution of algebraic/transcendental equations, system of equations, differential equations, numerical integration, interpolation, finite differences, and error analysis. Applications in numerical methods to aeronautical engineering. (Lab fee required.) Prerequisites: CS 110 or CS 210; MA 340.

**CS 436 – Computer Graphics II with Aviation Applications** **3 Credits**

Interactive graphics programming stressing program design, picture plotting, input handling, and concepts necessary to implement a graphics subroutine package. Basic mathematics of two-dimensional and three-dimensional geometric and viewing transformations. (Lab fee required.) Prerequisites: CS 301, CS 335 and MA 241.

**CS 440 – Database Management Systems** **3 Credits**

Practical considerations and applications of Database Management Systems (DBMS) in operational environments. Emphasis is on the activities necessary to analyze, design and implement a database. This is a project oriented course where the student will implement a database to satisfy user needs. A DBMS is used for this project and allows the student the opportunity to develop DBMS applications in assembly, COBOL, FORTRAN, or BASIC languages. (Lab fee required.) Prerequisite: CS 410.

**CS 445 – Interfacing** **3 Credits**

Introduction to microcomputers and microcontrollers, effect of the microprocessor on the system, memory, and microcomputer input/output methods. The subjects of interface components and their characteristics, designing interface circuits, interfacing to standard buses and peripherals. Interface layout and construction. Interface software design and implementation. (Lab fee required.) Prerequisite: CS 372.

**CS 450 – Real-time Systems** **3 Credits**

Interfacing real-time devices with computers, computer-to-computer communications, timing interrupt processing and queuing. Hands-on implementation of an application to an aviation project. (Lab fee required.) Prerequisite: CS 420.

**CS 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: CS 420.

**CS 299, 399, 499 – Special Topics in Computing – Application of Computers to Aviation** **1-6 Credits**  
Lectures, laboratories or seminars on selected topics in computing. Prerequisite: Consent of instructor and department chair.

## **ECONOMICS**

**EC 210 – Microeconomics** **3 Credits**  
An introduction to economic principles, problems and policies with emphasis on microeconomic theory and current domestic problems.

**EC 211 – 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 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 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 210, EC 211, 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 105, MS 210, EC210, EC 211 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 department chair. 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.) Corequisites: EL 102, MA 111.

## **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.) Corequisites: MA 111 or its equivalent, 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, load line analysis, active device parameters, active device equivalent circuits, amplifier coupling techniques, amplifier frequency response, power supply considerations. (Lab fee required.) Prerequisites: EL 101 and 102.

## **EL 207 – Basic Radiotelephone Equipment Theory and Operation 3 Credits**

A preparatory course for the FCC General Radiotelephone Operator's Licensing. Classroom presentations include a review of basic electronic theory which is applicable to FCC General Class Radiotelephone licensing, basic FCC law (Element I), basic operating practices (Element II), and basic radiotelephone (Element III). Prerequisite: EL 211. Corequisite: EL 311.

## **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 222 – Basic Electronic Circuits and Systems 4 Credits**

An introductory course in electronic circuits and their use in electronic communication systems. Subject areas include RF amplifier circuits, oscillator circuits, operational amplifiers, frequency multipliers, noise consideration, amplitude and SSB modulation, AM and SSB transmitters and receivers. Prerequisites: EL 103. (Lab fee required.)

**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 Corequisite: EL 221. (Offered on International Campus only.)

**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 322 – Advanced Electronic Circuits and Systems** 4 Credits

Continuation of EL 222. This course presents some of the more advanced circuits and their use in electronic communication systems. Subject areas include frequency synthesizers, antenna theory, transmission lines, radio-wave propagation, FM modulation, FM receivers and transmitters, microwave hardware, microwave active devices and circuits, broadband communication techniques, pulse and data communication systems, and radar fundamentals. (Lab fee required.) Prerequisites: EL 222 and EL 321.

**EL 299 – Special Topics in Electronics** 1 Credit

Lectures, laboratories or seminars on selected topics in electronics technology. Prerequisite: Consent of instructor and department chair.

## 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. Similitude and dimensional analysis; fluid measurements. Corequisite: ES 303.

**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. Prerequisites: PS 202, ES 304.

**ES 307 – Engineering Materials Science with Laboratory** **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. Corrosion. Prerequisites: PS 106, PS 202, ES 302. (Lab fee required.)

**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 resistance-capacitance 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. Systems block diagrams, feedback and transfer functions. Computer principles-analog computer programming, Boolean algebra and logic gates. Rotating electrical machines, transformers and other electromagnetic energy conversion devices. Automatic control systems-dynamic response, feedback control and transducers. Prerequisite: ES 404.

**ES 406 – Finite Element Fundamentals** **3 Credits**  
The basic equations of the theory of elasticity. Energy principles. Formulation and assembly of stiffness matrices and load vectors for elastic solids. Modeling considerations. Solution methods. Computer implementation of finite element and stress analysis procedures.

Interpretation of computer solutions. Design applications. (Computer fee required.) Prerequisites: AE 407, CS 210.

**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 program. Orbits, satellite launch, orbit transfer, interception and rendezvous, and long range ballistic trajectories. Space coordinate systems are considered along with a brief survey of celestial astronomy. Gyrodynamics, gyroscopic instruments, precession and nutation and inertial navigation are considered. 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, spatial geometry and computer programming skills (Students will write some simple two-body computer programs). Prerequisites: CS 210, 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: AE 404, ES 305, ES 404.

**ES 412 – Structural Dynamics**

**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 302, ES 303, MA 340.

**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 department chair. May be repeated with change of content.

# ENGINEERING TECHNOLOGY

## **ET 101 – Engineering Graphics** **2 Credits**

Principles of lettering. Drawing instruments and their use. Line-work code and drafting techniques. Geometrical construction. Multiview projection. Sectional and auxiliary revolutions. Dimensioning, shop processes and tolerances. Threads and fasteners.

## **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 201 – Technical Mechanics** **4 Credits**

Statics and dynamics. Systems of forces and moments, free body diagrams, equilibrium, truss structures, friction, distributed forces, Centroids, and moments of inertia. Kinematics and kinetics of particles and rigid bodies. Prerequisites: PS 201, MA 242.

## **ET 301 – Applied Aerodynamics I 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: ET 201, MA 242.

## **ET 302 – Applied Strength of Materials With Laboratory** **3 Credits**

Concepts of stress and strain. Stress and deflections of members subject to axial, torsional and bending loads. Laboratory experiments augment coursework. Prerequisite: ET 201.

## **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, ET 302.

## **ET 304 – Aircraft Structural Analysis with Laboratory** **4 Credits**

Analytical techniques for determining loads and stresses in trusses, beams and thin sheet structures. Laboratory measurements include loads trusses, shear flow in beams and thin-wall box structures, deflections of structures. Computer stress analysis procedures. Prerequisites: ET 302, MA 245.

## **ET 305 – Applied Thermodynamics with Laboratory** **4 Credits**

Definitions of heat and work, first and second laws of thermodynamics. Thermodynamic cycles used in engines and engine components. Introduction to compressible flow. Laboratory demonstra-

tions of engines and performance measurements. Prerequisites: MA 242, PS 202.

**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.

**ET 307 – Manufacturing Processes and Materials with Laboratory** 4 Credits  
The nature of production processes and how they influence 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. Laboratory work includes sheet metal forming, machining, riveting, composite fabrication, welding. Prerequisite: ES 302 or ET 302.

**ET 308 – Applied Aerodynamics II** 3 Credits  
Compressible flow, shock waves, supersonic flow, airfoil characteristics, nozzle flow. Prerequisites: ET 301, MA 245.

**ET 401 – Mechanical Design** 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, bearings and lubrication. Other selected topics. Prerequisite: ES 302 or ET 302.

**ET 402 – Applied Instrumentation Laboratory** 3 Credits  
Selection and operation of standard instrumentation components to measure and record force, strain, temperature, and pressure. Analysis of test data. Prerequisites: PS 202, MA 242, ET 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. Projects include use of composite materials and cost analysis. Prerequisites: ET 201, ET 303, ET 304.

**ET 404 – Aircraft Performance and Design** 3 Credits  
Aircraft static performance, introduction to stability and control. Application of aerodynamics through aircraft preliminary design project, including performance specification, general arrangement, weight and balance, and drag estimation. Prerequisite: ET 301.

**ET 405 – Non-Destructive Testing and Quality Assurance with Laboratory** 3 Credits  
Inspection procedures, proof-of-design requirements per FAR Part 23, material inspection techniques (magnetic particle, X-ray, visual), dimensional checking and use of inspection instruments. Statistical analysis of test data. Prerequisite: ET 307.

**ET 406 – Aircraft Systems Analysis and Design** 3 Credits  
Definition and functional description of aircraft systems. Analysis and design of dynamic systems to meet performance requirements. Prerequisites: ET 201, ET 303, ET 305, ET 306.

**ET 299, 399, 499 – Special Topics in Engineering Technology** 1-3 Credits  
Seminar courses on specialized topics or independent design and/or laboratory projects. Prerequisite: Permission of program chair.

## **FLIGHT-ACADEMIC**

**FA courses marked with an \* are not available to students whose initial enrollment in a flight program occurs after August 18, 1984.**

**\*FA 102 – Primary Flight** 2 Credits  
Instruction and flight training necessary for the student to accomplish his first solo flight in an airplane. Corequisite: AS 100.

**\*FA 103 – Basic Flight** 2 Credits  
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. Prerequisite: FA 102.

**FA 104 – Primary Flight** 2 Credits  
This course consists of the simulator and flight instruction necessary for the student to accomplish his first solo flight. Corequisite: AS 100.

**FA 105 – Private Pilot Certification** 2 Credits  
This course consists of continued student practice in those pilot operations and procedures necessary for the student to obtain the FAA Private Pilot Certificate. Prerequisite: FA 104. Corerequisites: AS 102, AS 103.

**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. Prerequisite: FA 103.

**FA 204 – Advanced Flight I** 2 Credits  
Instruction in flight training necessary for the student to operate a multiengine complex aircraft. The student will gain the aeronautical skill and experience necessary to meet the requirements for the FAA Private Pilot certificate with a multiengine rating. Prerequisite: FA 203.

**FA 205 – Basic Attitude Instrument and Advanced Flight Maneuvering** **2 Credits**

This course consists of simulator and flight instruction and practice of basic attitude instrument flight techniques. The student will also be introduced to advanced precision flight maneuvering and advanced cross-country operations. Prerequisite: FA 105. Corequisites: AS 201, AS 202.

**FA 206 – Instrument Flight Transition** **2 Credits**

This course consists of the simulator and flight training in instrument flight procedures necessary for the student to operate a single-engined aircraft within the National Airspace System. Prerequisite: FA 205. Corequisites: AS 203, AS 210.

**FA 302 – Commercial Pilot Certification** **2 Credits**

This course consists of continued student practice of instrument flight procedures and advanced maneuvering necessary to gain the necessary skill and proficiency to meet the requirements of the FAA Commercial Pilot Certificate-Airplane Single-Engine Land with the Instrument Rating. Prerequisites: FA 206 and successful completion of the FAA Commercial Pilot and Instrument Written Examinations.

**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 course is designed for a student who has the FAA Commercial Certificate. Prerequisite: AS 202.

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

This course consists of the instruction in 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 instruction. Prerequisites: AS 202 and FA 204.

**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. Prerequisites: FA 311, AS 102, AS 103, AS 201, AS 202, AS 203, AS 210.

**FA 340 – Multi-Engine Class Rating** **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. Prerequisite: FAA Commercial Pilot Certificate with an instrument rating.



**FA 400 – Certified Flight Instructor-Single Engine** 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. Prerequisite: AS 404.

**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. Prerequisites: AS 404, AS 406 and FA 400.

**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. Prerequisites: AS 404 and FA 400.

**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.

**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.

**FA 199, 299, 399, 499 – Special Topics in Flight** 0-2 Credits  
Flight training in selected areas for the purpose of gaining proficiency in required pilot operations for various certificates and ratings. Prerequisite: Approval of chief flight instructor and department chair.

## HUMANITIES

**HU 104 – Writing English as a Second Language** 5 Credits  
This course is designed for those non-native speakers of English who are found to need special practice in written English. Emphasis is on fundamental writing skills (organization, development, and mechanics), with added practice in spoken English. Cultural topics of particular interest to the class are included when necessary. (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.)

- HU 114 – Reading English as a Second Language** 5 Credits  
 This course is designed for those non-native speakers of English who are found to need special practice in reading English. Emphasis is on vocabulary enrichment and improvement of comprehension and reading skills. Cultural topics of particular interest to the class are included when necessary. (Credit not applicable to any degree.) (Lab fee required.)
- HU 116 – Receptive Communication Skills** 3 Credits  
 Individual and group instruction in the development of a variety of reading and study techniques. Emphasis is placed on the development of reading-study skills, comprehension, word attack, vocabulary improvement, and efficient, flexible reading habits. (Lab fee required.) (Credit not applicable to any degree.)
- HU 120 – Communications I** 3 Credits  
 Expository writing, interpretation, analysis and research methods. Fiction and nonfiction 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 250 – Introduction to Logic** 3 Credits  
 Principles of valid thinking; the nature of inductive and deductive inferences and their applications. Prerequisite: HU 121.
- 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 320 – Aesthetics of Visual and Musical Arts**                      **3 Credits**  
Provides a survey of the major artistic monuments of Western culture and discusses the methods by which artistic productions are analyzed. Prerequisites: HU 120 and 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 if he 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 355 – Creative Writing**    **3 Credits**  
The course culminates the interpretive and expressive elements of communications classes. The study, practice and utilization of a personal style of creative composition, examples of contemporary literature and submittal of publications are included in this course. Prerequisites: HU 120 and HU 121.

**HU 299, 399, 499 – Special Topics in Humanities**                      **1-6 Credits**  
Independent study, seminars and other specially arranged courses not regularly scheduled. Prerequisites: Consent of instructor and approval of the department chair.

## **MATHEMATICS**

**MA 105 – Quantitative Skills**    **3 Credits**  
Fundamentals and theory of algebra, basic laws of fractions, exponents, radicals, factoring, linear equations, manipulation of formulas, and solution of applied problems. (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 numbers and the elements of trigonometry.

**MA 111 – College Mathematics for Aviation I** 3 Credits  
A pre-calculus course designed for the student of aviation. Linear equations, systems of equations, functions and graphing, exponents and roots, quadratic equation, ratio and proportion, trigonometric ratios, right triangle solutions and vectors. Prerequisites: MA 105 or placement.

**MA 112 – College Mathematics for Aviation II** 3 Credits  
Basic calculus designed for the student of aviation. Differentiation and integration of algebraic functions; applications to velocity, accelerations, area, curve sketching and computation of extreme values. Prerequisite: MA 111.

**MA 120 – Quantitative Methods I** 3 Credits  
A pre-calculus course with applications to business and economics. Fundamental algebraic operations, functions, graphs, logarithmic and exponential functions, systems of linear equations and inequalities, linear programming and matrix algebra. Prerequisite: MA 105 or placement.

**MA 140 – College Algebra** 3 Credits  
Fundamentals of exponents, radicals, linear and quadratic equations, inequalities, and complex numbers. Introduction to functions, conics, elementary theory of equations, sequence and series, exponential and logarithmic functions, matrix algebra, and systems of equations. Prerequisite: MA 105 or equivalent.

**MA 141 – Trigonometry** 2 Credits  
Trigonometric identities and conditional equations, compound angles, half angles, multiple angles, inverse trigonometric functions, solution of right and oblique triangles, law of sines and cosines, trigonometric representation of complex numbers. Prerequisite: MA 105 or equivalent. Corequisite: MA 140.

**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 and normal distributions 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; 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, 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 functions; limits and continuity; differentiation and integration of algebraic and elementary trigonometric functions; applications of first and second derivatives. Prerequisite: MA 140 or equivalent. Corequisite: MA 141.

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

Differentiation and integration of transcendental functions; special integration techniques; polar coordinates; applications of the definite integral; numerical methods. 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; directional derivative and gradient; multiple integrals. Prerequisite: MA 242.

**MA 245 – Applied Technical Mathematics** **3 Credits**

Applied treatment of ordinary differential equations; Laplace transforms; matrix algebra and applications; computer techniques; numerical methods; least squares fit; normal distribution and applications. Prerequisites: MA 242, CS 210. (Not for Bachelor of Science degree in Aeronautical Engineering credit.)

**MA 300 – Applied Logic** **3 Credits**

Algebra of logic; truth tables; axiomatic system; set theory; Boolean algebra; design and simplification of digital circuits. Prerequisite: MA 111 or MA 120 or MA 140. (Not open to engineering students.)

**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 211 or 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 variation 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. Prerequisites: MA 242

**MA 430 – Linear Algebra** 3 Credits  
Matrix algebra, vector spaces, linear transformations, systems of equations, eigenvalue and eigenvectors. Prerequisite: MA 243 or the consent of the department chair.

**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 340.

**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 441.

**MA 299, 399, 499 – Special Topics in Mathematics** 1-6 Credits  
Lectures, seminars, laboratories, independent studies, or combinations of selected topics in mathematics. Prerequisites: Consent of instructor and approval of the department chair.

## MANAGEMENT SCIENCE

**MS 105 – 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 110 – Accounting I** 3 Credits  
An introduction to accounting; double entry, income statement, balance sheet, interpretation of accounts; partnerships and corporations. Corerequisite: MS 105. (This course offered only by the International Campus.)

**MS 112 – Management Accounting** **3 Credits**

This course 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; 1) full cost accounting; 2) differential accounting; and 3) responsibility accounting. Prerequisite: MS 110. (This course offered only by the International Campus.)

**MS 210 – Financial Accounting I** **3 Credits**

Fundamental principles applicable to the accounting cycle, asset valuation, income determination, financial reporting, and owners equity.

**MS 212 – Financial Accounting II** **3 Credits**

Fundamental principles applicable to financial statement analyses, funds and cash flow reporting, price level changes and income tax interperiod allocation. Prerequisite: MS 210.

**MS 305 – Management Analysis and Concepts** **3 Credits**

Provides an overview of relevant management principles and practices as applied in contemporary organizations. Focuses on management theories, philosophies and functions. Prerequisite: MS 105.

**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 qualifications 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 – Managerial 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: full cost accounting; differential accounting; and responsibility accounting. Prerequisite: MS 212.

**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, and wage and salary administration. Prerequisites: MS 305 and SS 210 or SS220.

- 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 210, 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 305.
- 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 105, MS 210, and CS 109 or CS 110.
- 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 or CS 330, MA 211 or MA 222.
- 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 105.
- MS 331 – Transportation Principles** **3 Credits**  
 Basic principles of the several modes of transportation — air, sea, rail, highway, and pipeline — including problems of competition, the importance of each in the economy, and future developmental prospects. Prerequisites: EC 110, EC 210 and MS 105.
- MS 390 – Business Law** **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 105.
- 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: CS 109 or CS 110, 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, MS 311.

**MS 408 – Airport Management** **3 Credits**  
Comprehensive examination of the major functions of airport management including master planning. Study of the socioeconomic effects of airports on the communities they serve. Prerequisites: MS 305, EC 210, EC 211.

**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 210, EC 211, MS 210, MS 305, 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: MA 211 and CS 109 or CS 110.

**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 210, MS 305, EC 210.

**MS 419 – Aviation Maintenance Management** **3 Credits**  
Comprehensive examination of organizational maintenance policies, programs and procedures. Emphasis on maintenance planning, forecasting and cost control; reliability; safety and flight schedule performance.

**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, MS 313.

**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.

## **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 210, EC 211, 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 212, MS 313, MS 315, MS 316.

## **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 the department chair. May be repeated with change of content.

# **MILITARY SCIENCE ARMY ROTC**

## **MY 101 – Basic Military Science**

**2 Credits**

Historical growth and development of the United States Army. An historical perspective of the role of the commissioned officer, stressing the magnitude of management decisions in the leadership arena. A study of military courtesy, discipline, customs and traditions of the service.

## **MY 102 – Basic Military Science**

**2 Credits**

Fundamentals of leadership, a study of leadership traits and principles associated with successful leaders. Fundamentals of land navigation that includes map reading, terrain identification, intersection, resection and polar coordinates.

## **MY 201 – Basic Military Science**

**2 Credits**

Fundamentals of Military Geography and its application. The mathematical analysis of terrain, to include determining slope gradient, constructing landmass profiles, and using representative fractions to determine the scale of navigational aids. A study of the organization and missions of U.S. Army units.

## **MY 202 – Basic Military Science**

**2 Credits**

A study of electronic communication doctrine and equipment utilized by the United States Army. An analysis of National Defense systems of the Warsaw Pact, Third World Nations, United States of America and the roles they play in world stability.

**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 210, EC 211, 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 212, MS 313, MS 315, MS 316.

**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 the department chair. May be repeated with change of content.

## **MILITARY SCIENCE ARMY ROTC**

**MY 101 – Basic Military Science** **2 Credits**  
Historical growth and development of the United States Army. An historical perspective of the role of the commissioned officer, stressing the magnitude of management decisions in the leadership arena. A study of military courtesy, discipline, customs and traditions of the service.

**MY 102 – Basic Military Science** **2 Credits**  
Fundamentals of leadership, a study of leadership traits and principles associated with successful leaders. Fundamentals of land navigation that includes map reading, terrain identification, intersection, resection and polar coordinates.

**MY 201 – Basic Military Science** **2 Credits**  
Fundamentals of Military Geography and its application. The mathematical analysis of terrain, to include determining slope gradient, constructing landmass profiles, and using representative fractions to determine the scale of navigational aids. A study of the organization and missions of U.S. Army units.

**MY 202 – Basic Military Science** **2 Credits**  
A study of electronic communication doctrine and equipment utilized by the United States Army. An analysis of National Defense systems of the Warsaw Pact, Third World Nations, United States of America and the roles they play in world stability.

**MY 301 – Advanced Military Science** **2 Credits**  
Fundamentals of the organization, capabilities and implementation of small unit organizations as applicable in a tactical scenario. Study and practical application of the theory of Small Unit Leadership as it applies to tactical weapons system deployment, land navigation, field communications, field fortifications, personnel motivation and management, tactics and strategy.

**MY 302 – Advanced Military Science** **2 Credits**  
Continuing development of the curriculum stated in MY 301 with additional inclusion of military training management, performance counselling, and written and oral communications techniques. Continued use of peer leadership scenarios to enhance leadership development.

**MY 401 – Advanced Military Science** **2 Credits**  
Fundamentals and study of Command and Staff relationships, organization, functions and duties. The decision making and estimating process. Personnel and logistical planning and estimates. Rear area operations/security. Organizational effectiveness techniques and utilization.

**MY 402 – Advanced Military Science** **2 Credits**  
Fundamentals of Military Law and its place in the American Military Society. A study of ethics and professionalism in the military and society. An introduction to the Military Logistical System.

## **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. (Cannot be used for credit in chemistry toward degrees in Aeronautical Engineering or Aircraft Engineering Technology.) 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. (Cannot be used for credit in physics toward degrees in Aeronautical Engineering, Aircraft Engineering Technology, Aeronautical Science, or Avionics Maintenance Technology.) 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.) (Cannot be used for credit in physics toward degrees in Aeronautical Engineering or Aircraft Engineering Technology.) 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.) (Cannot be used for credit in physics toward degrees in Aeronautical Engineering or Aircraft Engineering Technology.) Prerequisites: PS 103, MA 112.
- PS 105 – Chemistry I with Laboratory** **4 Credits**  
 Fundamental principles of chemistry that include: nomenclature, stoichiometry, atomic structure, periodic relationships, chemical bonding, geometries of molecules, properties of gases, solutions, and an introduction to organic chemistry. Laboratory work includes both descriptive and quantitative work. (Lab fee required). Corequisite: MA 140 or MA 241.
- PS 106 – Chemistry II with Laboratory** **4 Credits**  
 Chemistry principles that include: thermo-chemistry (enthalpy, free energy, and entropy), molecular and ionic equilibria, acids and bases, rates of reactions and electrochemistry. Laboratory work includes qualitative and quantitative work. (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** **5 Credits**  
 Vector and scalar quantities. Newton's Laws of motion and gravitation. Friction. Work, energy and power. Torque and rotational motion. Linear and angular momentum. Harmonic motion. Fluid statics and dynamics. Wave motion and sound. Four lectures per week and one three-hour laboratory per week. (Lab fee required.) Corequisite: MA 242.
- PS 202 – Engineering Physics II** **5 Credits**  
 Basic thermodynamics and kinetic theory of gases. Electric forces, electric field and Gauss's Law. Electric potential and electrostatic potential energy. Capacitance. Simple D-C circuit theory. Magnetic forces, magnetic field and Ampere's Law. Faraday's Law. Inductance. Electromagnetic oscillations and wave propagation. Geomet-

rical optics. Four lectures per week and one three-hour laboratory per week. (Lab fee required.) Prerequisite: PS 201.

**PS 301 – Astronomy**

**3 Credits**

A descriptive course dealing with the structure and evolution of the physical universe. Topics include the solar system (Earth, Moon, Sun, and planets), stars, black holes, galaxies, quasars, cosmology and exobiology. Planetarium trips and night observing sessions optional. Prerequisite: PS 102 or PS 103 or PS 201 or consent of the instructor.

**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 1-4 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. Prerequisites: Consent of instructor and approval of the department chair.

## **SAFETY OF FLIGHT**

SF courses are available only at certain International Campus locations.

**SF 190 – Safety Management (Formerly SF 195)**

**2 Credits**

A study of basic principles of management and the essentiality of these applications to sound aviation accident-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

- 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.) (Cannot be used for credit in physics toward degrees in Aeronautical Engineering or Aircraft Engineering Technology.) 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.) (Cannot be used for credit in physics toward degrees in Aeronautical Engineering or Aircraft Engineering Technology.) Prerequisites: PS 103, MA 112.
- PS 105 – Chemistry I with Laboratory** **4 Credits**  
 Fundamental principles of chemistry that include: nomenclature, stoichiometry, atomic structure, periodic relationships, chemical bonding, geometries of molecules, properties of gases, solutions, and an introduction to organic chemistry. Laboratory work includes both descriptive and quantitative work. (Lab fee required). Corequisite: MA 140 or MA 241.
- PS 106 – Chemistry II with Laboratory** **4 Credits**  
 Chemistry principles that include: thermo-chemistry (enthalpy, free energy, and entropy), molecular and ionic equilibria, acids and bases, rates of reactions and electrochemistry. Laboratory work includes qualitative and quantitative work. (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** **5 Credits**  
 Vector and scalar quantities. Newton's Laws of motion and gravitation. Friction. Work, energy and power. Torque and rotational motion. Linear and angular momentum. Harmonic motion. Fluid statics and dynamics. Wave motion and sound. Four lectures per week and one three-hour laboratory per week. (Lab fee required.) Corequisite: MA 242.
- PS 202 – Engineering Physics II** **5 Credits**  
 Basic thermodynamics and kinetic theory of gases. Electric forces, electric field and Gauss's Law. Electric potential and electrostatic potential energy. Capacitance. Simple D-C circuit theory. Magnetic forces, magnetic field and Ampere's Law. Faraday's Law. Inductance. Electromagnetic oscillations and wave propagation. Geomet-

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**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** **3 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, deformation analysis, service life considerations, and classification and recognition of structural failures.

**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**  
From 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. Prerequisite: SS 220.
- SS 320 – American National Government** **3 Credits**  
Basic issues of American democracy, constitutional principles and the executive, legislative and judicial branches of government.
- SS 331 – Current Issues in America (Formerly SS 330)** **3 Credits**  
A course in selected political-social-economic issues of national and international importance. Extensive use of journals, magazines and newspapers 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. Prerequisites: Consent of instructor and approval of the department chair.

# Academic Regulations And Procedures

## STUDENT RESPONSIBILITY

The student is responsible for being informed of all regulations and procedures required for continued attendance at the University. These are generally embodied in this Catalog, the Student Handbook, the Residence Hall Regulations Pamphlet, Academic Standards, Curriculum Standards and academic procedures that are published by the University. These documents are available for reference at Resident Centers, campus Records Offices, Student Government Offices, and Academic Departments throughout the University. University regulations will not be waived because a student pleads ignorance of established standards and procedures. A student who is unsure of any regulation should seek help or clarification from his/her Academic Advisor, Program Chair, or the Office of Registration and Records.

Academic regulations, curricula and procedures are subject to change. If such changes occur, they will be published either in an Addendum, or in the next Catalog to be issued. While students are allowed to remain under the curriculum provisions of the catalog in effect at the time of their admission to the University with respect to their degree program, regulations apply to all students enrolled subsequent to the effective date of the regulation.

For academic regulations pertaining to graduate students, see the Graduate Catalog.

## REGISTRATION

Students are required to register for each 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 Campus Records Office. 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.

Penalties will be charged for late registration and late payment of fees. Late registration will be allowed during the first three days 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 last day for registration, as designated in the Academic Calendar of this Catalog or the Resident Center schedule, whichever applies.



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

## CONTINUED ENROLLMENT

Students are considered to be continuing students, regardless of the number of hours for which they register, unless they:

1. Enroll at another institution without prior written approval. If prior approval is obtained, students may earn up to 12 semester credit hours at another institution and remain in continuing student status. For clarification, please see "Attendance at Other Institutions."
2. Leave the University for two consecutive calendar years;
3. Have been suspended or dismissed from the University.

Students failing to maintain continuous enrollment for any reason are required to reapply for admission. Continuously enrolled students, who have left the University for one or more trimesters, are required to inform the Department of Admissions of the degree program desired and the campus they wish to attend at least 60 days prior to the beginning of the trimester for which they wish to re-enter.

## 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 to include cancellation of any class, when deemed necessary and appropriate.

## ACADEMIC ADVISING

At the Daytona Beach and Prescott Campuses, each student is assigned an academic advisor. At International Campus locations, the Resident Center Representative 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. The advisor's written approval of a student's course selection is required before a student will be allowed to register.

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.

## 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, attend-

ance 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 credit hour is the unit of credit used throughout the University system. The trimester credit hour is equal to a semester hour. Quarter hour transfer credit will be converted to semester credit hours on the basis of a quarter hour equal to two thirds of a semester hour.

## 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. The minimum credit load for full-time student status during each Summer term is six trimester hours. Students carrying less than the minimum full-time load are classified as part-time students.

The normal maximum credit load for students is 18 credit hours per trimester, or nine credit hours per Summer term. Because lengths of academic terms at International Campus locations vary, student classification guidelines may vary. However, the following guidelines generally apply:

### 6-10-week terms

Full-time student — minimum of six credit hours;  
Maximum credit hour load — twelve credit hours.

### 12-week term

Full-time student — minimum of eight credit hours;  
Maximum credit hour load — 15 credit hours.

At all locations, a student whose cumulative GPA is 3.00 or higher may enroll for an overload with prior approval of the Dean of Academics or his/her designee.

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
Juniors:	58-87 hours
Seniors:	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 (non-credit)	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
WP	Withdrawal from the University-Passing	0
WF	Withdrawal from the University-Failing	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. At the Daytona Beach and Prescott campuses, 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. At International Campus locations, a grade of I must be made up no later than the end of the second term following the term in which the I grade was assigned. When an I grade is not made up within the prescribed time period, it will be changed to an F.

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. When a student processes an official withdrawal from the University prior to the final examination period, he will be assigned a grade of W for all courses in which he was enrolled and the date of withdrawal entered on the student's transcript.

A Grade Point Average (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, I, N, AU, S, T 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.

Except for flight courses, 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. Flight courses may be repeated only once. Students are responsible for indicating courses being repeated at the time of registration.

## **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 Chair. 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. International Campus students process changes in registration through their Resident Center representative.

## **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.

## **WARNING, PROBATION, SUSPENSION AND DISMISSAL**

A student at the Daytona Beach or Prescott campuses whose cumulative GPA is less than 2.0 for one trimester will be placed on academic warning. A student whose cumulative GPA is less than 2.0 for two consecutive trimesters will be placed on academic probation. Students on probation are classified as students not in good standing and may not serve as an elected member of the Student Government Association, serve on the editorial staff of a campus publication or work on campus and may lose eligibility for financial aid programs. The academic program of a student on warning or

probation may be restricted by the campus Dean of Academics. When 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 part of the student's permanent academic record.

A student whose cumulative GPA is less than 2.0 for three consecutive trimesters, or a student on academic probation whose cumulative GPA at the end of the subsequent trimester is below 2.0, will be suspended from the University.

Any student who has a trimester/term GPA of less than 1.0 may be suspended or placed on academic probation at the discretion of the appropriate Dean of Academics.

An International Campus student whose cumulative GPA falls below 2.0 for 12 consecutive credit hours of course work will be placed on academic warning. If the cumulative GPA remains below 2.0 after an additional 12 credit hours of academic work, the student will be placed on probation. A student whose cumulative GPA remains below 2.0 for a third consecutive period of 12 credit hours, or whose cumulative GPA falls below 1.0 for any consecutive 12 credit hours of course work, will be subject to suspension from the University.

The University reserves the right to dismiss a student at any time and without further reason, if the student's conduct, academic standing or other performance is regarded as undesirable. "Undesirable conduct" is defined as conduct not within the best interests of the University, as construed by the Student/Faculty Conduct Committee, and includes but is not limited to, academic dishonesty, misuse of computer facilities or violation of computer security, obstruction or disruption of University activities, theft or property damage, physical abuse of persons and possession of dangerous or narcotic drugs.

The University reserves the right to refuse admission to students from other colleges or universities where they were on probationary status or were academically dismissed. If the University admits such students they will be admitted on probationary status.

## CATALOG APPLICABILITY

For a student enrolled at either the Daytona Beach or Prescott Campus, the Catalog in effect when he matriculates is applicable. If the student leaves the University and must reapply for admission, the Catalog in effect at the time of readmission will apply. (Circumstances requiring readmission to the University are listed under the Readmission to the University heading of this Chapter.)

For students enrolled at International Campus locations, the Catalog in effect at the time of submission of a formal application for admission is applicable. If an International Campus student interrupts his enrollment for a period in excess of two years, the student must reapply for admission and will be under the Catalog in effect at the time of readmission.

Curricular requirements stated in the applicable Catalog will not be affected by any subsequently published Addendum to that Catalog or by later Catalogs unless the student elects to graduate under the provisions of a later Catalog or Addendum. If the student does elect to graduate under the provisions of a later Catalog or Addendum, he must meet all requirements (admission, transfer, graduation, etc.) contained in that Catalog or Addendum.

Students who fail to complete the curriculum requirements of the degree program in which they enroll within a period of ten calendar years from the date of original enrollment will become subject to the curriculum requirements of the catalog in effect on the last day of the ten year period.

## GRADUATION HONORS

Graduation honors are awarded only to students completing a baccalaureate program and primarily recognize excellence of performance in Embry-Riddle courses. In order to be eligible, the student must have completed at least 45 credit hours in residence at E-RAU. The level of graduation honors will be based on the cumulative grade point average for all courses taken at E-RAU and those courses transferred from other institutions which are directly applicable to the student's degree program.

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 at the Daytona Beach and Prescott campuses. 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

In a similar manner, academic recognition is granted on a periodic basis for students enrolled at International Campus locations. Students who attain the indicated cumulative grade point averages for 12 or more consecutive hours of course work are named to the Dean's List and Honor Roll. The cumulative GPA in all such cases includes all courses completed during the most recent term. Once granted these honors, the International Campus student must complete an additional sequence of 12 or more credit hours of work with Embry-Riddle before again becoming eligible.

## 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 students pursuing their degrees at the Prescott or Daytona Beach Campuses, the last 30 academic credit hours must be completed with Embry-Riddle for a Bachelor's degree; the last 12 academic credits must be completed with Embry-Riddle for an Associate degree. International Campus students may be exempted from the requirement that the last 30 or 12 hours be completed with the University. However, they must complete a minimum of 30 or 12 credit hours with Embry-Riddle for the Bachelor's or Associate degree, respectively and must be enrolled with the University the last term prior to graduation.
4. 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 specified required courses preclude achievement within the minimum credit hour requirements in the catalog listing for the degree.
5. A minimum cumulative GPA of 2.00 for all work completed with the University is required for any undergraduate degree. Candidates for the award of the B.S. in Aeronautical Engineering and the A.S./B.S. in Aircraft Engineering Technology degrees must also earn a minimum cumulative GPA of 2.00 in all required AE, ES or ET courses.
6. Students will not be issued a diploma or transcript of their records until all debts or obligations owed to the University have been satisfied.
7. Students will not be issued a diploma unless their behavior is in good standing, according to University policies and regulations. This includes, but is not limited to, being off disciplinary probation.
8. An Application for Graduation must be initiated by the student and received within the time limit specified by the appropriate Campus Records Office. In the event the graduating student will not attend a scheduled graduation exercise, the diploma will be mailed to the address requested by the student.

## **TWO DEGREES OF THE SAME RANK**

In order for a student to earn a second baccalaureate, a minimum of 30 credit hours of E-RAU course work over and above that which is required for the declared primary degree must be completed. At least 60 credit hours must be E-RAU courses and at least 20 of the 30 additional credit hours must be in upper-division courses.

To earn a second Associate degree, the student must complete at least 12 credit hours of E-RAU course work over and above that which is required for the primary degree; at least 24 credit hours must be E-RAU courses.

## **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. Students should select an Area of Concentration at the time of application for admission to a degree program. The Area of Concentration which the student indicates on his application for graduation will be entered on the student's permanent academic record (the transcript).

## **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 should contact their current Program Chairman to initiate a change of degree program.

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.

Students at International Campus locations should contact their Resident Center representative in order to change their degree programs.

## **ATTENDANCE AT OTHER INSTITUTIONS**

Once admitted to the University, students are required to complete all work to be applied toward their degrees with the University unless prior written authorization is granted to take courses and/or training at other institutions. Students desiring to take academic courses (including all flight courses) at other institutions while enrolled at Embry-Riddle must process a "Petition to take Courses at Another Institution" form obtained from the Student Records Office.



In considering a petition to take courses at another institution, the student's GPA, the availability of the course or courses in the E-RAU curriculum, and the availability of substitutable courses will be taken into account. Students may be authorized to enroll in a course or courses at another *local* institution only when it is essential that a course or courses be taken at a specific time and schedule conflicts preclude completion of the work within the University.

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 programs and are not offered by the University at the E-RAU location they attend. Acceptable standards for transfer of courses are listed in the Admission 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 Embry-Riddle is not permitted without *advanced written authorization* from the appropriate authority. When permission to fly outside of Embry-Riddle is granted, no academic credit will be accepted or awarded by Embry-Riddle except that academic credit may be granted for helicopter training completed at an approved Part 141 school. Credit will be awarded for successful completion of this program on a PASS/FAIL basis if prior written permission is obtained from the appropriate authority. Credit will not exceed one credit hour for the flight portion nor three credits for the academic portion. Enrolled students who receive flight training outside Embry-Riddle without proper prior approval are subject to dismissal from the University. This applies to currently enrolled students and to students not currently enrolled but maintaining "continous enrollment". (For a definition of continous enrollment, see the Continued Enrollment heading of this Chapter.)

In degree programs requiring flight training, at least one flight course must normally be completed in residence at Embry-Riddle, regardless of any advanced standing or transfer credits which may be granted. Exceptions may be made for currently qualified military trained pilots possessing FAA certification of for currently qualified, fixed-wing airline pilots.

## SUMMER FLIGHT

All Aeronautical Science 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.

## **NON-DEGREE STUDENT STATUS**

Embry-Riddle recognizes the needs of working adult learners for retraining or enhancement of professional skills, and facilitates the entrance of this type of student to the University. Students who meet University admissions requirements are permitted to enroll in courses as special students in non-degree seeking status 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. Only degree seeking students who have formally been admitted to E-RAU are eligible for financial aid programs. An adult learner desiring non-degree student status can receive information and register for courses in the campus Records and Registration office.

## **WITHDRAWAL**

A Daytona Beach or Prescott Campus student who leaves the University for any reason must officially process a withdrawal clearance. Students withdrawing must do so through the Office of Registration and Records. When a student files an official withdrawal from the University after the end of the scheduled withdrawal period, a WP or WF grade, based on the student's performance will be assigned in all courses, and the date of withdrawal will be entered on the student's permanent record. Withdrawal is defined as withdrawing from a particular term or trimester and allows the student to maintain his status as a continuing student.

International Campus students should contact their Resident Center Representative 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. A student enrolls for 12 or more trimester hours, or equivalent, with other educational institutions between two periods of attendance at the University.
- b. The student is not enrolled at the University for a period of two or more consecutive years.
- c. Any student who has been suspended or dismissed from the University for any reason must file for readmission with the appropriate Campus Records Office. (A student suspended 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 date of suspension.

International Campus students should contact their Resident Center Representative 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.

# Student Services And Activities

Embry-Riddle takes the position that a university education is more than just classes and continuous study. There are many opportunities for involvement outside of the classroom setting to enhance student success. Students are encouraged to participate in 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.

## STUDENT ACTIVITIES

The Student Activities office acts as a lively nerve center for campus activities which supplement the students' learning and provide a well-rounded education. Professional staff provide workshops on leadership, communications and personal growth for all interested students. Seminars concerning time management, and money management help students develop their abilities in many diversified areas.

Also, valuable educational experiences may be gained through active participation in approved campus activities and organizations, which contribute to the overall development of the student.

All activities, including recreational and cultural events which take place on campus, are available and accessible to handicapped students.

Fraternities on the Daytona Beach Campus include: Alpha Eta Rho International Aviation Fraternity, Arnold Air Society Honorary Service Fraternity of Air Force ROTC Cadets, Delta Chi International Social Fraternity, Lambda Chi Alpha International Social Fraternity, Omicron Delta Kappa National Leadership Honor Society, Sigma Chi International Social Fraternity, Sigma Gamma Tau National Honor Society in Aerospace Engineering, Sigma Phi Delta Professional Engineering Fraternity, Sigma Pi International Social Fraternity, Sigma Tau Delta National Honorary English Society, and the Interfraternity Council (a representative governing body of all fraternities on campus).

Student organizations at Daytona Beach include the American Institute of Aeronautics and Astronautics, Angel Flight, AVION Newspaper, Baha'i Club, Bowling League, Brothers of the Wind, Chess Club, Christian Fellowship, Entertainment Committee, Hellenic Society, International Student Association, Karate Club, L-5 Aerospace Society, Management Club, Muslim Student Associa-

tion, PHOENIX Yearbook, Platoon Leaders Class, Screaming Eagles, Scuba Club, Skydiving Club, Society of Collegiate Journalists, Student Government Association, Veterans Association, and many other social, recreational, and service clubs and organizations.

The center for students' extracurricular activities is the University Center. It is available for meetings, movies, dances, concerts, lectures, cultural events, tournaments and many other out-of-class functions. The Center also houses the Student Activities Office, Student Government Association, AVION Newspaper, PHOENIX Yearbook, Mail Room, Bookstore, Barbershop, Health Services, Counseling Center, Cashier's Office, Career Center, the Office of the Dean of Student Affairs and a cafeteria.

The Prescott Campus has a variety of social, recreational, sport and service clubs which meet the needs of the student body. The clubs include the National Intercollegiate Flight Association, Arnold Air Society, Radio Control Club, Pioneer (student newspaper), Echo (yearbook), Management Club, Parachute Club, Resident Hall Association, College Republicans and Student Entertainment Committee. The Rugby Club and the Soccer Club are sports clubs that compete against other colleges and universities in the Southwest.

The Prescott Campus Student Affairs Complex provides a focus for campus activity with its gymnasium, weightlifting room, and recreational facilities. Athletic and camping gear may be checked out in the equipment room located in the game room. The complex also houses the new snack bar facility that provides a place for student, faculty and staff interaction as well as a location for club meetings, and social events. The Dean of Students office, the Student Activities office and Financial Aid are also housed in the complex.

## STUDENT GOVERNMENT

The purpose of student government is to promote the welfare and to 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. Members in the student government include all undergraduate students.

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 the Executive Committee of the Board of Trustees.

## RECREATION/ATHLETICS

The Department of Recreation at the Daytona Beach Campus provides, throughout the year, a wide variety of intramural sports and contests, composed of leagues and tournaments which emphasize team and individual competition along with various educational programs that emphasize mental, social and physical well being. The activities range from tennis, volleyball, softball, floor hockey, flag football, and other sports upon request.

The campus has a beautiful swimming pool with diving and swim competition facilities, and a universal gym for weight lifting and body building. The jogging and exercise trail meanders for 1.3 miles through the campus with 20 exercise stations along its route. An outdoor basketball court, tennis courts, a softball field, and an indoor racquetball complex round out the recreational facilities.

The Director of Recreation works closely with clubs and organizations to assist with planning and implementing sports programs and activities. Students wishing to take part in recreation should bring basic sporting equipment, but most equipment needed for participation is provided through this office.

Embry-Riddle at Prescott has a full intramural sports schedule that emphasizes student participation. A wide range of sporting activities in team, dual and individual sports is available to all students. Currently, the soccer club and rugby club play at the intercollegiate level with other clubs and universities throughout Arizona. A variety of recreational activities throughout Arizona is sponsored by Embry-Riddle for students during their leisure. These activities include white water rafting on the Colorado River, snow skiing in Flagstaff, fishing and hunting in the national forestland, canoeing on local lakes, and backpacking and camping throughout the state. Athletic facilities at Prescott include a weight room, gymnasium, outdoor swimming pool, athletic field and jogging trails.

## CAMPUS MINISTRY

The Office of Campus Ministry on the Daytona Beach Campus is staffed through a freewill 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 also 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.

At Prescott, arrangements are made as needed for representatives of local churches to meet with students, and for students to get together for group study, worship and fellowship.

## ALUMNI ASSOCIATION

The purpose of the Embry-Riddle Alumni Association is to promote, aid, encourage and develop the aims and objectives of Embry-Riddle. The Association serves as a link between the University and its former students.

Membership in the Association is open to all former students who have graduated from, or successfully completed, a course of instruction at Embry-Riddle Aeronautical University or its predecessor institutions.

Graduates of Embry-Riddle are in an excellent position to evaluate the objectives, facilities and effectiveness of the E-RAU curriculum as preparation for careers in aviation and related industries. Often, on the basis of their personal experience, they can answer some of the many questions regarding expenses, housing, social activities and other aspects of the University.

Many alumni volunteer to act as contacts for prospective students and other members of the Alumni Association. They welcome the opportunity to discuss the instruction offered and its usefulness in preparing for aviation careers. For more information, contact the E-RAU Alumni Coordinator at the Executive Offices.

## 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 inclement weather and many other obstacles which they may never have had to face alone. This section describes several services the University offers to the handicapped student.

Recognizing the need for services for the handicapped student, Coordinators for Handicapped Students have been appointed for each campus. They are:

Daytona Beach Campus — Director of Health Services

International Campus — Dean of Academics

Prescott Campus — Dean of Students

The new student is acquainted with facilities and service for the handicapped student through a one-to-one contact with the staff of the Department of Admissions.

Early registration is arranged through the Department of Admissions. 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 this process.

If physical limitations prevent a student from being tested in a group situation, individual arrangements will be made. These arrangements are available for all testing, including proficiency, in-class and take-home tests.

## **JOHN E. KIRK CENTER FOR HEALTH SERVICES**

The Health Services staff at the Daytona Beach Campus is committed to providing students the education and guidance necessary toward achieving and maintaining good health by preventive care. Available services include assessment and treatment of minor illnesses and injuries, individual health counseling, medical grounding of flight students, and small group educational programming. Reference materials and audiovisual learning aids complement the personal aspects of the preventive approach to student health. Good health is the responsibility of the individual student and insures a productive college career.

Another responsibility of the student is The Medical Report form provided by the Admissions Office. This form must be completed and returned to the Central Admissions Office. (An FAA Medical WILL NOT meet this requirement.) This Medical Report form provides authority from either 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 is granted. Those who plan to enroll in a flight course are advised to obtain prior to arrival, at least a Class II Medical Certificate from a physician certified as an Aviation Medical Examiner. Students must possess this certificate at the time they take any flight course.

Health insurance is not mandatory for E-RAU students but is strongly recommended. At the Daytona Beach Campus a student group insurance program is available. Rates are determined annually; premiums are non-refundable. Information is available in the Health Services Office.

While attending E-RAU, local hospitals are close to both residential campuses, and referral service is conducted by the qualified University Health Service staff.

## **THE COUNSELING CENTER**

The Counseling Center staff, at the Daytona Beach Campus, assist students in pursuing successful college careers through individual counseling and educational programming. Professionals trained in counseling and guidance help students with personal, social and educational concerns or problems. Areas of concern may include homesickness, social relationships, illness or death in the family,



poor academic performance, study skills, stress reduction, time management and basic adjustment to University life.

Additionally, the Center maintains a variety of self-help materials, i.e., books, pamphlets and audio-cassette tapes, which are available to students on a loan basis.

For those students whose concerns are outside the scope of the Center staff's expertise, referral services are available. Staff will assist students in identifying University and/or community resources to meet their individual needs.

An additional function of the Counseling Center is the coordination of the Student and Family Orientation programs. The goal of Student Orientation is to assist students in making smooth transitions into the E-RAU community. Through interactions among new students, upperclassmen, faculty, and staff, information and guidance are combined with friendship and entertainment.

Family Orientation provides parents and spouses of new students with an introduction to the campus. Presentations by faculty and staff address concerns which are common to families of new students. An informal reception and tour of the campus are included in the program.

At the Prescott Campus, a professionally trained counsellor is a member of the Division of Student Affairs staff. For long term counseling, referrals are made to a local community agency at a minimal cost to the student.

## 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  
3200 N. Willow Creek Rd.  
Prescott, AZ 86301

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 luggage.

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 for official University notices. The correct address should then be as follows:

NAME  
E-RAU Box #——  
Regional Airport  
Daytona Beach, FL 32014

NAME  
E-RAU Box #——  
3200 N. Willow Creek Rd.  
Prescott, AZ 86301

## DINING SERVICE

The Food Service Division operates with the philosophy of caring about students. It provides students with tasteful, well-balanced, nutritious meals at reasonable prices. Students can select from a number of meal plans, pay cash, or use discount cards for their meals from the dining service.

Specific information is available from the Director of the Food Service.

At the Prescott Campus, all on-campus residents subscribe to a meal plan. Off-campus students wishing to obtain a meal plan may contact the Division of Administrative Services.

## OFF-CAMPUS HOUSING

The Off-Campus Housing Office strives to meet the needs of the commuter student population, which comprises 75% of the student body at Daytona Beach. In an effort to serve the needs of students residing in off-campus housing, the following services are available.

The office operates a rental listing service which maintains an up-to-date list of properties available for students to rent and a list of students seeking roommates. To take advantage of this service you must visit the office. NOTE: The office cannot reserve housing for you nor give out listings over the phone.

A Discount Motel Program is designed to offer students a comfortable and economical place to stay while seeking permanent accommodations. The program is available at the beginning of the Spring and Fall trimesters. The beginning and ending dates for this program and the rates vary by season.

The Off-Campus Housing Office is available to provide information concerning tenant/landlord rights, advise on general housing problems, provide information on small claims court, and make referrals.

In addition to those services, the office also provides the "Commuter Student Information Manual", Apartment Complex Guide, sample leases, guide to area realtors, city maps, bus schedules, and consumer and legal information.

At Prescott, the Off-Campus Housing Office assists students who are looking for off-campus accommodations in Prescott or the nearby community. Although there are limited apartments, houses and mobile homes in the community, approximately one half of the student body locates off-campus housing. The University Housing staff maintains listings of current rentals and students seeking roommates. Maps, brochures and other information about living in Prescott are available at the Off-Campus Housing Office.

## **UNIVERSITY-MANAGED HOUSING**

University Housing provides and operates both on-campus and off-campus residential facilities for full-time, unmarried, or unaccompanied students. However, since applications typically exceed available accommodations (except during the Summer trimester), students are urged to apply as early as possible. Priority for room reservations, in the case of new students, is based on the date of receipt of the housing contract and the partial trimester prepayment provided that the students have been confirmed for admission to that particular campus of the University and the tuition deposits have been paid.

On-campus facilities at Daytona Beach include a three-story inside hall residence hall and a two-story external entrance/exit housing complex, which, when combined with the University's two off-campus apartment complexes, house over 1,100 students. All facilities are co-educational and are supervised by students and professional staff.

Accommodations also include a limited number of specially equipped units available for handicapped students. The University can only facilitate those handicapped students who are self-sufficient or require minimal assistance, as determined by the Director of Housing.

For further information regarding University Housing, please consult the Housing Services brochure for your selected campus, available from the Admissions Office.

## **FOREIGN STUDENT SERVICES**

The Office of Foreign Student Services at the Daytona Beach Campus helps meet the special needs of foreign 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 advocates of foreign students, as well as a source of information and liaison for immigration matters.

## **VETERANS ASSOCIATION**

The Embry-Riddle Veterans Association consists of veterans and active duty military personnel enrolled at the Daytona Beach Campus of Embry-Riddle. Its main functions are to provide communication between the members and 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 Office in Daytona Beach.

## CAREER CENTER

The Career Center 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 Career Center 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 student to become better informed about the application of individual capacities, assets and limitations to a career. In addition, the office helps students secure summer employment.

## LEARNING RESOURCES CENTER

The Learning Resources Center offers information resources in support of the educational programs of the University. Books, documents, films, magazines and computer data bases are selected and made available to students, faculty, and staff for use in their work.

The University is proud of its comprehensive aviation collection. Current documents and journals are complemented by an outstanding historical collection used by researchers.

# Financial Information

The fees, prices, schedules, terms of payment, and other financial elements listed in this Catalog are accurate as of the date of its publication. All of these factors are, however, subject to change.

## I. TUITION

### Undergraduate:

Daytona Beach and Prescott Campuses	\$115 per credit hour
International Campus Resident Centers	\$70 per credit hour
Center for Independent Studies	\$110 per credit hour

### Graduate:

Resident Centers	\$110 per credit hour
Daytona Beach Graduate Center	\$140 per credit hour

## II. REQUIRED ADVANCE DEPOSITS (new students only)

Tuition deposit	\$150
Foreign student deposit	\$5,000
Dormitory Reservation Prepayment	\$95

## III. FEES

### 1. Student Fees: The following two fees are required of all students:

a. Student Government Association (per trimester)	\$15
b. Application Fee- Non refundable	
U.S.	\$25
International Campus Students	\$15
Foreign Students (Non U.S. Citizens)	\$50

### 2. Laboratory Fees: Students may determine which, if any, of the following fees are relevant to their training program by referring to the Degree Programs Chapter of this Catalog.

Course	Fee	Course	Fee
AE 415	\$100	EL 103	\$10
AE 420	\$ 10	EL 221	\$10
AE 421	\$ 10	EL 222	\$10
AE 299	\$ *	EL 321	\$10
AE 399	\$ *	EL 322	\$10
AE 499	\$ *	ES 307	\$15
All AMT Courses		ES 401	\$10
Except		ES 403	\$10
101, 102	\$ 5	ES 407	\$10
AS 201	\$ 10	ES 410	\$20
AS 307	\$ 20	HU 114	\$10
AV 340	\$ 10	HU 116	\$10

AV 341	\$ 10	PS 103	\$10
CS 101	\$ 20	PS 104	\$10
All other CS courses		PS 105	\$20
Except		PS 106	\$20
105, 220, 460	\$ 35	PS 201	\$20
EL 101	\$ 10	PS 202	\$20
EL 102	\$ 10		

\*Computer charge as appropriate.

### 3. Flight Costs

#### FLIGHT COURSE DEPOSITS:

If the student chooses one of the programs which involves flight, there will be additional costs that cover training aircraft and professional flight instruction. These costs are estimated and a deposit is required before flight can begin. These estimates are based on average completion times; as a result, a refund or additional charge may be due upon completion of the course. Students who withdraw or are dismissed from the flight program will be refunded their remaining unused flight course deposit less a \$50 administrative fee and all applicable charges.

Course deposits are required as follows:

Course No.	Simulator	Flight
FA 102	\$350	\$1,150
FA 103	\$250	\$2,250
FA 104	\$350	\$1,150
FA 105	\$250	\$2,250
FA 203	\$300	\$2,700
FA 204	\$400	\$2,400
FA 205	\$300	\$2,700
FA 206	\$400	\$2,400
FA 302	\$400	\$2,100
FA 306	—	\$1,800
FA 311	\$400	\$2,100
FA 313	\$250	\$2,250
FA 340	—	\$1,700
FA 400	—	\$1,800
FA 409	—	\$1,500
FA 411	—	\$2,500
FA 413	—	\$1,500
FA 416	—	\$1,600

#### Flight Hourly Rates\*

Type	Equipment/ Instruction	Dual	Solo
Primary Aircraft		\$53.00	\$36.00
Twin Engine Aircraft		\$106.00	\$89.00
Oral Instruction	\$17.00		
Flight Simulator (GAT)		\$20.00	\$3.00
Flight Simulator (AST 300)		\$28.00	\$11.00

\*A fuel charge adjustment is made as fuel prices vary.

#### 4. Housing and Food Services Fees:

Housing Charges	\$560-\$610
Reservation Prepayment (Non Refundable)	\$ 95
Food Service Charges	\$260-\$650

#### 5. Insurance:

Hospital/Medical Insurance coverage is available at registration.

#### 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	
(subsequent to payment deadline date)	\$25*
(subsequent to 28th day of classes)	\$100*
6. Foreign Student Service Fee	
(per . trimester)	\$50**
7. ROTC Activity Fee (Army and Air Force)	
(per trimester)	\$15*
8. Maintenance and Avionics Technology Tools	
(purchased and retained by student)	\$350-400*
9. Flight Evaluation Fee	\$40*
10. Course Equivalency Examination Fee	\$45
11. Cooperative Education Fee	\$210
12. FAA Designated Mechanic Examiner Fee	\$100*
13. FAA Written Examination Fee	\$15*
14. Contract for Degree (not required if student pays \$15 application fee)	\$25*
15. Transcript Fee (per transcript)	\$ 2
16. Annual Contract for Degree Maintenance Fee	\$25*
17. Graduation Fee	\$25

\*Non-refundable.

\*\*Required of all foreign Students to provide special educational services to aid in the orientation and adaptation of Foreign Students to University and community life.

#### 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.

Master Card 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	\$1,725
Room & Board	\$885-1,290
Insurance	\$34
Student Government Association	\$15
Lab Fees	\$10
Books	\$150

\$2,819-\$3,224

### VI. REFUNDABLE FEES & CHARGES:

A. The following are refundable according to the withdrawal schedule below:

1. Tuition
2. Laboratory Fees
3. Student Government Assoc. Dues
4. Housing Fees (Less \$95 Housing Processing Fee)
5. Foreign Student Service Fee

Withdrawal Schedule:

*Full Trimester*

Period I First calendar week	100%*
Period II Second calendar week	80%
Period III Third calendar week	60%
Period IV Fourth calendar week	40%
Period V Fifth calendar week	20%
Period VI Sixth calendar week and after	0%

\*Less \$100 administrative fee

*Summer Term*

Period I Class days 1-3	100%†
Period II Class days 4-6	80%
Period III Class days 7-9	60%
Period IV Class days 10-12	40%
Period V Class days 13-15	20%
Period VI Class days 16 and after	0%

† Less \$50 administrative fee

International Campus Refund Policy:

First Calendar Week of Term	100%
Thereafter	0%

B. **Required Advance Tuition Deposit** (new students only)

Refundable in full, provided written notice is given at least 60 days before the first day of registration for the trimester.

C. **Flight Course Deposits**

See Flight Course Deposit listing above.

### VII. REFUND POLICY:

Only those students who officially withdraw from the University through the Records and Registration Office are eligible for a percentage refund of charges as set forth above. The effective date of the withdrawal as determined



by the Records and Registration Office govern the refund computations.

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 Cashier'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.

#### VIII. DELINQUENT ACCOUNTS

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. Student tuition and fees are due at registration and are considered delinquent subsequent to the due date. In the instance of charges incurred subsequent to registration, accounts are due at the date of billing and are considered delinquent 30 days hence. Students making late payment of tuition and fees are subject to late payment fees as outlined under Miscellaneous Fees. When a student's account is delinquent, all academic and administrative processing 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. In event of default in payment, all sums remaining unpaid shall thereafter bear interest at the maximum rate allowed by law. The student is also subject to the costs of collection including reasonable attorney's fees for making such collection.

# Financial Assistance

## FINANCIAL AID INFORMATION

Embry-Riddle participates in six federal financial aid programs, several state programs, and several University administered scholarship and employment programs. The University makes every effort, within the limitations of its available financial resources, to ensure that no qualified student is denied the opportunity to obtain an education because of inadequate funds.

Embry-Riddle believes the primary responsibility for financing an education lies first with the student and the student's family. Therefore, the student should begin preparing for educational costs by applying for financial aid early, saving money, looking for ways to cut costs, and becoming aware of specific program requirements by reading all publications distributed by the Financial Aid Office. Financial aid awards rarely cover all expenses of the students who attend Embry-Riddle.

To be considered eligible to apply for any of the financial aid programs at Embry-Riddle, students must be U.S. citizens or permanent residents of the U.S., enrolled or accepted for enrollment as at least a half-time student in a degree program and, for the most part, have financial need. Also, students must maintain academic standards of progress as defined by the University to maintain eligibility for financial aid.

Academic Standards of Progress at Embry-Riddle require a student to maintain a cumulative grade point average (CGPA) of at least 2.0 and make reasonable progress toward completing a degree based on credit hour completion each trimester. Refer to the Financial Aid Brochure for a complete description of the Academic Standards of Progress and other important information.

To apply for financial aid, students are requested to complete the College Scholarship Service Financial Aid Form (FAF) and the Embry-Riddle Financial Aid Data Sheet (FADS). To apply for a scholarship, students must also complete an Embry-Riddle Scholarship Application. Also, some programs require a separate application.

Most financial aid awards are made on a first-come/ first-served basis because of limited funds. Therefore, students should apply for financial aid *early*, beginning in January for the following academic year. Students applying for financial aid after January for enrollment the following academic year should not expect to be awarded a National Direct Student Loan or a Supplemental Educational Opportunity Grant. Funds in these programs are extremely limited.

A detailed explanation of how to apply for financial aid, specific program requirements, forms needed, application deadline dates

and other important information can be found in the Financial Aid Brochure. Also, students may consult the Financial Aid Office at the campus they plan to attend to answer any questions concerning financial aid. International Campus students should contact their Resident Center Director for financial aid information.

Financial aid at Embry-Riddle is in the form of grants, loans, employment and scholarships.

## GRANTS

Grants are a form of financial aid which *do not* need to be repaid. Most grants are based on financial need.

- Pell Grant
- Supplemental Educational Opportunity Grant
- State Grants
- Florida Tuition Voucher
- Florida Academic Scholars Fund

## LOANS

Loans are a form of financial aid which *must* be repaid at low interest. Long-term loans are usually paid back after the student graduates. Short-term loans are normally for emergencies only and usually paid back within 30-60 days.

### LONG-TERM LOANS

- National Direct Student Loan
- Guaranteed Student Loans
- PLUS Loan
- E-RAU Repayable Educational Assistance Loan (REAL)

### SHORT-TERM LOANS

Students apply at the Cashier's Office.

- Emergency Loan Fund — established by the Ila Brignall Memorial, Commanche Flyer Foundation and Strickler Loan Fund.
- Walter Lux Memorial Loan

## EMPLOYMENT

Employment opportunities exist for students meeting certain eligibility requirements to work part time either on or off campus to help pay for their educational costs. Students interested in employment are requested to contact the Student Employment Office.

- College Work-Study Program
- Embry-Riddle Student Employment Program

## SCHOLARSHIPS

Scholarships are awarded to students according to their academic achievement and high probability of success in an aviation career. Students applying for a scholarship must complete a Scholarship Application available from the Financial Aid Office. Students are also requested to complete the College Scholarship Service Financial Aid Form (FAF) and the E-RAU Financial Aid Data Sheet (FADS). Scholarships are extremely limited. Some scholarships are available only at certain campuses. For further information about scholarships, contact the Financial Aid Office of the campus you plan to attend.

## OTHER FINANCIAL ASSISTANCE PROGRAMS

- AIR FORCE ROTC SCHOLARSHIPS

Air Force ROTC (AFROTC) offers yearly scholarships covering a student's college education for two, two and one-half, three, three and one-half, and four years. Each scholarship pays for tuition, laboratory and incidental fees, textbooks and also includes a \$100 per month (tax free) allowance (up to a total of \$2000).

Students never enrolled in a college or university as a full-time student are eligible for the four year scholarship provided they can complete their four year degree before their 25th birthday. High school students interested in a four year scholarship must apply to Air Force ROTC Headquarters, Maxwell Air Force Base AL, 36112, before *December 15th of their senior year*. Application forms for the scholarship are available at any university AFROTC Department.

Freshmen and Sophomores enrolled in the Air Force ROTC program at Embry-Riddle are also eligible for other Air Force ROTC scholarships. Freshmen can compete for three and one-half and three year scholarships, while sophomores compete for two and one-half and two year scholarships. Students apply for these scholarships through the AFROTC Department at Embry-Riddle.

Junior College transferees can also compete for a two year scholarship. These scholarships are on a competitive basis, however, application must be made through the AFROTC Department *before January* of their entering junior year.

- 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, three, and four year scholarships are available in the Spring Trimester at the Army ROTC Department. For information concerning eligibility and application, see the Reserve Officer Training Programs section in the Guide to the Curriculum 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 is in the Reserve Officer Training Programs section in the Guide to the Curriculum Chapter.

- **FLIGHT LEADERSHIP/FELLOWSHIP PROGRAM**

The Flight Leadership/Fellowship Program is available to students who enroll in the Aeronautical Science degree program. Students are selected for the Flight Leadership portion of the program based upon academic excellence and leadership potential. Selections for the Flight Fellowship portion of the program are made from those Flight Leadership students who continue to demonstrate the ability and desire to become outstanding flight instructors.

While not every Flight Leadership student is selected for a fellowship, those who are serve as Assistant Flight Instructors while completing their advanced studies. Flight Fellowship students can accumulate a significant number of flight hours before completing their academic training.

The Flight Leadership/Fellowship Program is highly competitive, yet rewarding. Interested students should contact the Chairman of the Flight Department at the Daytona Beach campus or the Chairman of the Aeronautics Department at the Prescott campus for additional information.

- **AVIATION MAINTENANCE FELLOWSHIP PROGRAM**

The Maintenance Fellowship Program provides a 75 to 100 percent 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 instruc-

tional load of 300 hours per trimester (20 hours per week for 15 or 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. Maintenance Fellows must maintain continuous enrollment. 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 the College of Aviation Technology.

- **TUITION PAYMENT PLANS**

Several companies offer monthly installment tuition payment plans to assist parents and students in paying their educational expenses. For further information contact the Financial Aid Office.

# University Campuses

## DAYTONA BEACH CAMPUS

Over the past eighteen years, ERAU'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 land is perhaps the most visible evidence of ERAU's endeavor; the fleet of late model, fully equipped Cessna 172's and Piper Seminole 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, multi-engine simulators, a weather center, and a dispatch center.

Near the flight center is the Samuel Goldman Aviation Maintenance Technology Center. Here, instruction is given in maintenance and repair of fixed-wing and helicopter airframes, powerplants (reciprocating and turbo-jet), and avionics. This four-building complex contains laboratories and classrooms equipped with the most modern tools to provide the student with aircraft maintenance theory as well as "hands-on" techniques for readying aircraft for flight. Three laboratories are dedicated to Avionics Maintenance Technology training including basic electronics, digital, and avionics labs. The avionics lab (FAA Certificated Repair Station 707-50) is designed and equipped to simulate avionics shops that students will encounter upon graduation.

Engine test cells (both reciprocating and jet) provide students with an exceptional means for determining how well the engine they have just repaired and assembled performs in a "live" situation. The advanced reciprocating engine lab is FAA Certificated Repair Station 708-55.

Adjacent to the Maintenance Technology Center is the Engineering Science Laboratories building. This facility, which was designed primarily for the Aeronautical Engineering and Aircraft Engineering Technology programs, 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. This building also houses structures, materials, electronics and aircraft design laboratories, as well as digital and analog computers. On the second floor of the building are faculty offices and a computer terminal room for student and faculty use.

The Lindbergh Center, near the Engineering Science Laboratories, provides modern classroom facilities for students pursuing various degree programs. The Lindbergh Center also contains numerous faculty offices as well as modern instructional aids to

help the students in their studies. The computer facilities provide "hands-on" learning opportunities for students to write, develop and run computer programs in management, engineering and other disciplines. The computers also assist the staff in course registration, flight scheduling, and financial transactions. The computers are linked to remote terminals throughout the campus through a centralized time-sharing system. The Learning Resources Center offers a wide variety of information which supports the research requirements of students. Open seven days a week, the LRC is staffed by librarians/information specialists who teach students to access pertinent resources. In addition to an outstanding aviation collection, many other curriculum support materials are available in a variety of formats. The University has taken a lead in purchasing or producing media and interactive video programs to support the student's learning process. Modern reading, chemistry, and physics labs round out the Lindbergh Complex.

Across from the Lindbergh Center is an area of campus set aside for student cultural development and activities, the University Center. Within the center are a full-service cafeteria, well equipped bookstore, mailroom, cashier, the Career Planning and Placement Center, Cooperative Education, the Counseling Center, Health Services, a 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 many opportunities to exchange viewpoints with students from many foreign countries.

Both on-campus and off-campus accommodations are available to students who prefer to reside in University-managed housing. On-campus facilities include a three-story residence hall and a two-story residence hall which, when combined with the University's two off-campus apartment complexes, house over 1,100 students. All facilities are coeducational and are fully staffed with on-site professional supervision.

For students desiring non-University-managed housing accommodations, the Off-Campus Housing Office maintains a current referral service of facilities in the Daytona Beach area for both married and single students.

As the student body has grown over the past years, Embry-Riddle has made major improvements in the physical facilities to accommodate this growth. Construction and remodeling activities occur on a virtually continuous schedule. In the past few years, a residence hall, an engineering complex, two classroom buildings, and several parking areas have been added. The most recently completed structure on campus is the new Service Park housing most of the Physical Plant operations. Projects currently in the planning stages include a new Learning Resource/Student Study facility, additional parking, and an apartment-style housing complex.



# INTERNATIONAL CAMPUS

More than a dozen years ago, Embry-Riddle recognized that many of those employed in both the military and civilian sectors of the aviation industry were subject to frequent temporary absences from home, frequent changes in location, and irregular work schedules. At the same time, it was clear that these working professionals were most eager to pursue an aviation higher education. However, their occupational and personal commitments prevented them from enrolling in a conventional university program with routine daytime class periods. Thus, the University opened its first resident center at Fort Rucker, Alabama in 1970. Classes were, and still are, scheduled to compliment the work schedules of the student population. Classes may meet in the very early morning, during lunch periods, in the evenings, on weekends, or at any other time that serves the needs of the students. Likewise, term lengths are variable, from 8 to 12 weeks. Since 1970, the adoption of these and other innovative methods of instruction has stimulated the International Campus network of education centers to grow to more than 80 sites extending from Hawaii to western Europe. Roughly half of the locations are spread throughout the continental United States and Hawaii, while the balance are situated in England, West Germany, Spain, Italy, and the Netherlands.

The resident centers offer associate, bachelor, and master's degree programs in a variety of aviation specialties to members of the United States Army, Navy, Air Force, Marine Corps, and Coast Guard, as well as civilians from all segments of the aviation industry. Most centers are located on military installations with many of these authorized to enroll civilian government employees, dependents, and local civilians in addition to service members. The International Campus also participates in the Miami Education Consortium which serves the entire south Florida area which is home to domestic and foreign air carriers, manufacturers of aircraft and aircraft components and equipment, a large FAA contingent, and several military bases. The concentration of aviation professionals in southern Florida provides an excellent pool of top notch aviation faculty and guest lecturers for the University. All resident centers are approved by the appropriate agency of the state in which they operate and by the Veterans' Administration before the first class is scheduled.

Although the network of resident centers continues to make aviation higher education available to an increasingly greater share of the aviation population and frequently enables students to change job location without interrupting their education, a sizeable group remained unserved. The industry employs many people at remote, isolated locations, in many areas not served by a resident center, and whose work schedules are regular only in their irregularity. The Center for Independent Studies was developed to provide this group with an opportunity to study. The general

education degree requirements may be completed through regionally accredited local colleges or universities or nationally standardized testing programs (CLEP/DANTES). The aviation-oriented and other curricular requirements are satisfied by completing a series of independent study courses developed by the University. The instructional materials for each course include textbooks, study guides, and audio cassette tapes. Twelve weeks are allowed to complete a course which culminates with a proctored, comprehensive final examination. There is no requirement for on-campus study. The independent study program is approved by the Southern Association of Colleges and Schools, as are all University programs.

The International Campus maintains a comprehensive system of academic quality control. The curricula, course outlines, textbooks, and academic standards and policies are identical to those used and followed throughout the University. Course content is standardized through the course outlines, textbooks, and instructional support materials supplied to all International Campus locations by the Department of Academic Standards and Support. As a student moves from one center to another, he can be confident that his previous work will synchronize perfectly with courses at the new site. To keep pace with the needs of today's student, the University is introducing more and more computer applications into its full range of course offerings. Faculty selection is based upon the currency and relevancy of academic credentials and professional experience. American and foreign aviation executives, professional pilots, military and civilian technical specialists and professors from prestigious academic institutions are prevalent among the International Campus graduate and undergraduate faculty. All faculty candidates are reviewed and approved by the International Campus Dean of Academics.

Resident center students have a few unique advantages over many of their colleagues at a more traditional campus. Their academic efforts are made concurrent with their work, prompting a two-way transferrance of knowledge and information and the addition of a valuable tone of relevance to the educational process. They often study with faculty who are actively embroiled in the major challenges and problems facing the industry today and are able to witness, at first-hand, the application of the newest techniques. They graduate having gained a valuable combination of academic and experiential credentials.

In addition to making Embry-Riddle graduate and undergraduate degree programs available throughout the world, the International Campus conducts aviation-related workshops and seminars. These non-credit programs are designed to serve the professional aviation community as part of the University's philosophy that the need for education never ceases.

For more detailed information about International Campus programs and specific resident center locations, contact the Dean of Academics, International Campus or the nearest resident center.

Interested students should write to the Director of Student Records and Registration or visit the nearest resident center for admission information. Those interested in the independent study program should contact the Director, Center for Independent Studies. The address for all of the officials noted above is:

Embry-Riddle Aeronautical University  
International Campus  
Star Route Box 540  
Bunnell, Florida 32010

## PRESCOTT CAMPUS

The Western Campus of Embry-Riddle Aeronautical University is located in Prescott, Arizona, approximately 100 miles north of Phoenix. Here in one of the most picturesque portions of the Grand Canyon state, students can pursue an education on a superb campus surrounded by unsurpassed scenery.

With modern classrooms, resident halls and the latest equipment and facilities, Prescott provides high caliber programs. In addition to the Aeronautical Science degree program, Prescott offers baccalaureate degrees in Aeronautical Studies. Aviation Management, Aviation Administration, Professional Aeronautics and Aeronautical Engineering.

Flight instruction is given in the E-RAU Prescott fleet of Cessna single engine trainers and Piper Seminole multi-engine aircraft. All of these modern aircraft are equipped with the most modern avionics equipment. Flight operations are conducted from the Flight Operations Building located at the Prescott Municipal Airport just minutes from the campus. In addition, Prescott offers single engine and multi-engine aircraft simulators to help students perfect their flying technique. Prescott has a flying team that competes in regional and national air meets of the National Intercollegiate Flying Association.

Air Force ROTC is available to all qualified men and women. AFROTC studies will prepare these students for active duty assignments as Air Force commissioned officers.

On the Prescott campus students learn the aviation business from professionals. The majority of the faculty have a solid aviation background in addition to academic qualifications. On the ground and in the air students benefit from the knowledge of former airline pilots, Navy and Air Force aviators, FAA inspectors and meteorologists.

The small size of the student population at Prescott benefits both students and faculty. With a low student-teacher ratio, students benefit from individual attention in the classroom and on the flight line. They also benefit from a professionally staffed, modern 25,000 volume Library, that includes special educational materials, current newspapers, magazines, and other periodicals. Nearby is the audio-

visual center where students may use a wide range of sophisticated electronic learning aids.

Another outstanding facility is the campus auditorium. Used for seminars, workshops, and many other events, this 371 seat facility has superb acoustics, and is equipped with two concert grand pianos, theatrical lighting and complete audio-visual systems.

Because Prescott is located in one of the finest recreational areas in the Southwest, students, faculty and staff enjoy an unlimited variety of outdoor recreational activities. Hiking, skiing, boating, rock climbing, lake fishing, river rafting along with the Grand Canyon, Indian country, ghost towns and Arizona deserts are within two hours drive. 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 Broadway shows and big name entertainment at Las Vegas.

On campus, the Student Activities Department, in coordination with the Student Association, organizes a wide range of activities including dances, barbecues, concerts, movies and special events. For athletics, the Student Activities Department sponsors intramural competition in many popular team, dual and individual sports, as well as intercollegiate club activities in soccer and rugby. Campus recreational facilities include a gymnasium, weight room, outdoor swimming pool, jogging trails and a game room.

The city of Prescott also has much to offer students. Recently, named one of the "10 Most Liveable Cities in America" by a national news magazine, it boasts an old west tradition going back to the world's oldest rodeo held every year during the 4th of July holidays. Due to its mile high location, and mild four season climate (it enjoys 350 flying days a year), Prescott has become a popular retirement and tourist community. A city of about 20,000, with an equal number of people living in a 30 mile radius, Prescott has one of the most complete recreational programs in the Southwest.

With its beautiful natural surroundings, complimented by two golf courses, 16 tennis courts, a half dozen fishing lakes, and many other recreational opportunities, Prescott offers something for everyone.

## EXECUTIVE OFFICES

The University's Executive Offices are located in Bunnell, Florida, 17 miles north of Daytona Beach adjacent to Route I-95. Located here are the offices of the President; Vice President and Chancellor; Vice President and Director of Development; Vice President and Director of Special Projects and the Corporate Secretary.

The International Campus, is also headquartered here.

# Faculty And Administration

The Administration and Faculty of Embry-Riddle are listed below. An asterisk (\*) denotes the International Campus; a plus (+) denotes the Prescott Campus; a cross (†) denotes the Executive Offices and all others are members of the Daytona Beach Campus.

## OFFICERS OF THE UNIVERSITY

### **Ledewitz, Jeffrey H.†**

*Interim President and Chancellor.* B.A., Stetson University; M.A., George Washington University; Ed.D., Oklahoma State University.

### **Fidel, John A.†**

*Vice President and Director of Development.* B.S., U.S. Naval Academy; C-H&I.

### **Motzel, L. William†**

*Vice President, Assistant Secretary and Director of Special Programs.* B.A., University of Notre Dame; M.S.E.E., Saint Louis University; Ph.D., Catholic University of America; P-ASEL.

### **Daly, Paul S.+**

*Vice President.* B.S., Engineering Science, Naval Postgraduate School; M.B.A., University of West Florida; C-ASMEL-I.

### **Williams, Charles S.\***

*Vice President.* B.S., U.S. Naval Academy; M.A., Stanford University; C.

### **Thompson, Dianne R.†**

*Corporate Secretary/Treasurer.* A.A., Daytona Beach Community College; B.S., Embry-Riddle Aeronautical University.

## PROVOSTS

### **Daly, Paul S. +**

*Prescott Campus.* B.S., Engineering Science, Naval Postgraduate School; M.B.A., University of West Florida; C-ASMEL-I.

### **Lippold, Carl H.**

*Daytona Beach Campus.* B.A. and M.A., Catholic University of America; Ph.D., Claremont Graduate School; C-ASMEL-I; H.

### **Williams, Charles S. \***

*International Campus.* B.S., U.S. Naval Academy; M.A., Stanford University; C.

# ACADEMIC AFFAIRS

## DEANS

### **Brady, Terrence V.\***

*European Division. B.G.S., University of Nebraska; M.S., University of Arkansas.*

### **Brown, Robert M.\***

*U.S. Division. A.B., Hobart College; M.A., George Washington University; AGI; IGI.*

### **DiGirolamo, Anton**

*College of Aviation Technology. B.S., University of Nebraska; M.Ed., Rollins College; Ed.D., Nova University; BGI; IGI; C-ASMEL-I; CFI-I-ASMEL; Teachers Certificate.*

### **Doherty, Susan C.\***

*Academics. B.S., University of Maine; M.Ed., Fitchburg State College; M.B.A., Stetson University.*

### **Fogle, Sarah D.**

*Academics. B.A., and M.A., University of Florida.*

### **Haley, Marie<sup>+</sup>**

*Academics. B.A., University of Texas; M.S., Lamar University; Ph.D., Arizona State University.*

## ASSOCIATE DEANS

### **Hagleberger, Robert L.\***

*European Division. B.A., Auburn University; M.Ed. and M.S.B.A., Boston University.*

### **Halle, S. Portland<sup>+</sup>**

*Academics. B.A., Stanford University; M.S., Naval Postgraduate School; P-ASEL; BGI.*

## ASSISTANT DEANS

### **Burhoe, John M.\***

*Administration, U.S. Division. B.A., Norwich University; C-ASEL-I, H-I.*

## INTERNATIONAL CAMPUS RESIDENT CENTERS

### **Bertram, Ronald J.\***

*Director, California Region. B.A., Loyola University; M.S., University of Southern California.*

### **Gorman, John J.\***

*Director, Pacific Region. B.S., U.S. Military Academy; M.A., Georgetown University; M.B.A., Pepperdine University; ASMEL-I.*

### **Shepp, Barre L.\***

*Director, San Francisco Region. B.A., Chapman College; B.A., Columbia College; M.B.A., Pepperdine University.*

### **Hopper, Richard S.\***

*Director, Northwestern Region. B.S., University of Oregon.*

**Stockton, Wendell R.\***

*Director, Southwestern Region. B.A., Park College.*

**Hennings, Paul E.\***

*Director, North Central Region. B.G.E., University of Nebraska at Omaha; M.S., Troy State University; Command Pilot (USAF).*

**McCurdy, John D.\***

*Director, Central Region and Consulting Director, U.S. Division. A.A., Billings Business College; B.S., Embry-Riddle Aeronautical University; M.S., Murray State University; CFI-ASMEI; H.*

**Townsend, W. Merle\***

*Director, East Central Region. B.S. and M.S., University of Missouri at Columbia.*

**Lepore, Charles J.\***

*Director, Gulf Region. B.G.S., University of Nebraska; M.B.A., Troy State University.*

**Thompson, Jack H.\***

*Director, Virginia Region. B.S., University of Maryland; M.Ed., College of William and Mary; C-ASMEI-I.*

**Haley, Harold L.\***

*Director, Northeastern Region. B.S., and M.S., Northwest Missouri State University; C-ASMEI-I.*

**McEntee, Joseph J.\***

*Director, Washington Metropolitan Region. B.S., New York University; M.A., The American University.*

**Prince, Linda P.\***

*Director, Southeastern Region. B.A. and B.S.W., Concord College; M.A., Ball State University.*

**Bailey, Melodye K.\***

*Director, Northern Bavaria Region. A.A., Enterprise Community College.*

**Shockley, Paul L.\***

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- G — Glider
- H — Helicopter
- I — Instrument
- L — Land
- P — Private Pilot
- S — Seaplane
- AD — Aircraft Dispatcher
- IA — Inspection Authorization
- ME — Multi-Engine
- SE — Single-Engine
- A&P — Airframe and Powerplant Maintenance Technician
- AGI — Advanced Ground Instructor
- ATP — Airline Transport Pilot
- BGI — Basic Ground Instructor
- CFI — Certified Flight Instructor
- CTO — Control Tower Operations
- DME — Designated Mechanic 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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# Index

- Academic Advisor .....122  
Academic Regulations  
and Procedures .....121  
Academic Suspension .....125  
Accreditation Board  
for Engineering  
and Technology .....8  
Accreditation .....8  
ACT .....18  
Activities .....133  
Active Duty  
Military Personnel .....18  
Addendum .....121,127  
Admission Requirements  
General Procedures .....10  
Foreign Student  
Procedures .....11  
Transfer Student  
Procedures .....12  
Advanced Standing .....13  
Affiliations .....8  
Air Force ROTC .....30  
Scholarships .....149  
Aircraft Rates .....143  
Airframe and Powerplant  
Technology .....27  
Type 65 .....27,47  
Type 147 .....27,47  
Air Traffic Control .....29  
Alumni Association .....136  
Application for  
Graduation .....128  
Areas of  
Concentration .....23,129  
Army ROTC .....32  
Scholarships .....149  
Attendance .....122  
At Other Institutions .....129  
Auditing .....125  
Auditorium .....157  
Aviation Education Design .....34  
Aviation Maintenance  
Technology Programs .....26  
Avionics Technology .....27  
  
Basic Skill  
Requirements .....18,24  
Board of Trustees .....182  
Executive Committee .....185  
Trustees Emeriti .....184  
Boards of Visitors .....186  
  
Bootstrap .....18  
Campus Ministry .....135  
Career-Academic  
Program Locator .....20  
Career Center .....141  
Catalog Applicability .....126  
Center for  
Independent Studies .....11,156  
Chairmen .....161  
Change of Degree  
Program .....129  
Change of Registration .....125  
Class Attendance .....122  
Classification  
of Students .....123  
Computer Center .....153  
Computer Science  
Programs .....26,41  
Contact Hour  
Requirements .....123  
Continued Enrollment .....122  
Contract for Degree .....9  
Cooperative Education .....30  
Coordinators for Handicapped  
Students .....136,195  
Counseling Center .....137  
Course Descriptions .....79  
AE .....80  
AF .....82  
AMT .....83  
AS .....87  
AV .....90  
CE .....91  
CS .....91  
EC .....96  
EL .....97  
ES .....98  
ET .....101  
FA .....103  
HU .....105  
MA .....107  
MS .....110  
MY .....114  
PS .....115  
SF .....117  
SS .....119  
  
Daytona Beach Campus .....152  
Deans .....159  
Of Academics .....123,126  
Dean's List .....127  
Degree Completion  
Program .....18

Degree Programs .....	22,35	Program .....	150
Aeronautical		Flight Operations	
Engineering .....	25,35	Building .....	156
Aeronautical Science .....	65	Flight Programs .....	28,65
Aeronautical Studies .....	68	Foreign Students .....	9
Aircraft Dispatcher		Admissions Procedure .....	11
Certification .....	67	Services .....	140
Aircraft Engineering		Deposits .....	142
Technology .....	26,37	Fraternities .....	133
Aircraft Maintenance .....	43	Freshmen .....	123
Aviation		Full-Time Credit Load .....	123
Administration .....	50	General Aviation	
Aviation Computer		District Office .....	28
Programming .....	40	Gemini Flight .....	28
Computer Science		General Education	
with Aviation		Requirements .....	25
Applications .....	41	General Information .....	7
Aviation Maintenance		Goldman Aviation	
Management .....	52	Maintenance Technology	
Aviation Maintenance		Center .....	152
Technology .....	44	Grade	
Aviation Management .....	56	Point Average .....	124
Aviation Safety .....	77	Reports .....	125
Aviation Technology .....	45	Systems .....	124
Avionics Maintenance		Graduate Programs .....	29
Technology .....	48	Graduation	
General Aeronautics .....	59	Honors .....	127
Professional		Requirements .....	128
Aeronautics .....	60	Grants .....	148
Delinquent Accounts .....	146	Guide to the Curriculum .....	20
Deposits .....	142,143	Handicapped Students .....	136
Dining Service .....	139	Registration .....	19
Dismissal .....	125	Services .....	136
Engineering Science		Health Service .....	137
Laboratories .....	152	History of Embry-Riddle .....	7
Executive Offices .....	157	Honor Roll .....	127
Expenses Per		Housing .....	139,140
Trimester .....	144	Fees .....	144
Facilities for Handicapped		Off-Campus .....	139
Students .....	136	University .....	140
Faculty .....	162	Incomplete (grade) .....	124
Fees .....	142	Industrial Advisory	
Housing .....	144	Committees .....	188
Lab .....	142	Insurance .....	144
Miscellaneous .....	144	International Advisory	
Student .....	142	Council .....	185
Financial Assistance .....	147	International Campus .....	154
Financial Information .....	142	Jogging Trails .....	135
Flight at Other		Juniors .....	123
Institutions .....	130		
Flight Fellowship			



Lab Fees .....	142	Flight.....	130
Learning Resources		Responsibility .....	121
Center .....	141	ROTC	
Lindbergh Center.....	152	Air Force .....	30
Loan Programs.....	148	Army .....	32
		Regulations and Procedures .....	121
Mail Service .....	138	SAT.....	18
Management Programs .....	28	Schedule of Classes .....	122
Marine Corps		Scholarships.....	149
Commissions.....	33,150	Seniors .....	123
Masters Programs.....	29	Service Members Opportunity	
Maximum Credit Load.....	123	Colleges .....	9
Meal Plan .....	139	Services.....	136
Medical Report Form .....	137	Sophomores .....	123
Message from		Student Activities.....	133
the President.....	6	Student Employment.....	148
Miscellaneous Fees.....	144	Student Fees.....	142
		Student Government .....	134
Non-Degree Student		Student Responsibility .....	121
Status.....	131	Summer Flight.....	130
Officers of		Transfer Students Admissions	
the University .....	158	Procedures.....	12
Overload.....	123	Credit .....	12
Part-Time		Trimester Hour .....	123
Credit Load.....	123	Tuition .....	142
Payment and Refund		Two Degrees of the	
Committee .....	146	Same Rank.....	129
Payment Procedure.....	144	Type 65 .....	27,47
Policies.....	195	Type 147 .....	27,47
Purpose.....	7	Undesirable Conduct.....	126
Prescott Campus .....	156	Unit of Credit.....	123
Privacy of Student		University Center.....	134,153
Records .....	132	Veterans.....	17
Probation.....	125	Association .....	140
Readmission to		Warning.....	125
the University .....	131	Wilson Aviation	
Recreation .....	135	Technology Center.....	152
Refund		Withdrawal	
Fees and Charges.....	145	from a Course.....	125
Policy .....	145	from the University .....	131
Registration.....	121	Refund Schedule .....	145
Change of .....	125		
For Handicapped			
Students .....	19		
Religious Services (see			
Campus Ministry).....	135		
Repeat of Course.....	124		
Required Advance			
Deposits .....	142		
Resident Centers .....	154		
Residence Requirements .....	128		

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