Embry-Riddle Aeronautical University

Graduate Catalog

Master of Business Administration in Aviation

Master of Aviation Management

Master of Aeronautical Science

1982-84

Embry-Riddle Aeronautical University

Teaching Aviation Sciences Since 1926

ACCREDITED BY THE SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS

Offering the Degrees

MASTER OF BUSINESS ADMINISTRATION IN AVIATION

MASTER OF AVIATION MANAGEMENT

MASTER OF AERONAUTICAL SCIENCE

College of Graduate Studies
Star Route Box 540
Bunnell, Florida 32010
(904) 673-3180, Ext. 224, 222

This catalog becomes effective January 1, 1982.

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General Information

message from the president

In choosing a graduate school, you are about to make one of the most important decisions in your life. I hope the information in this catalog will help you make the decision which is right for you.

In its more than 50 years of service, Embry-Riddle Aeronautical University has become acknowledged as the world's leader in aviation higher education. This reputation for leadership is founded on three principal characteristics: the professional quality of our instruction, our total commitment to aviation education and our innovative programs in response to the needs of the aviation industry.

Most of our graduate faculty who teach aviation related courses have industry experience in public or private enterprise. This enables the faculty to provide an important link between theory and practice. A constant exposure to "real world" experience helps our students develop the critical, analytical, problem-solving and decision-making skills they will need to respond to the dynamic challenges of the aviation industry.

Because of our total commitment to aviation education, Embry-Riddle has the active interest and support of aviation leaders on our Board of Trustees and on advisory committees. These leaders are of great assistance in formulating our curriculum so that it meets the rapidly changing needs of the aviation industry and provides a solid foundation in traditional core courses for the Master's Degrees.

If you are interested in a future in aviation and can meet the high standards set by Embry-Riddle, we invite you to apply for enrollment and become a part of the Embry-Riddle tradition of excellence in aviation higher education.

Aeronautically,

Jack R. Hunt

Jack R. Hunt
President

Program Locations

Embry-Riddle Aeronautical University offers its masters-level programs on the Daytona Beach Campus and at many locations on its International Campus.

The graduate programs are offered in Miami, Florida, through the Miami Education Consortium (MEC) located on the Barry University Campus, as well as College of Continuing Education Centers throughout the United States and Europe. These Centers are listed below.

For further information concerning the graduate programs at the various locations, call or write:

GRADUATE LOCATIONS, U.S.

College of Graduate Studies
Embry-Riddle Aeronautical University
International Campus
Star Route Box 540
Bunnell, FL 32010
(904) 673-3180, Ext. 224

Miami Education Consortium
Embry-Riddle Aeronautical University
Associate Dean of Graduate Programs/Miami
11300 N.E. 2nd Avenue
Miami, FL 33161
(305) 751-5795 or (305) 754-4484

FAA Training Center
Embry-Riddle Aeronautical University
Training Branch ACT-17
Atlantic City, NJ 08405
(609) 641-8200, Ext. 3302

Davis-Monthan AFB Center
Embry-Riddle Aeronautical University
3555 CSG/DPE
Davis-Monthan AFB, AZ 85707
(602) 747-5540

Fort Campbell Center
Embry-Riddle Aeronautical University
P.O. Box 98
Fort Campbell, KY 42223
(502) 624-4085

Fort Knox Center
Embry-Riddle Aeronautical University
P.O. Box 103
Fort Knox, KY 40121
(502) 624-4085

Fort Rucker Center
Embry-Riddle Aeronautical University
P.O. Drawer N
Fort Rucker, AL 36362
(205) 598-6232 or (205) 598-6252

Hawaii Center
Embry-Riddle Aeronautical University
1515 Ohialoke Street
Honolulu, HI 96821
(808) 373-4152

Keesler AFB Center
Embry-Riddle Aeronautical University
P.O. Box 5092
Keesler AFB, MI 39534
(601) 377-2323

Kirtland AFB Center
Embry-Riddle Aeronautical University
1606 ABW/DPE
Kirtland, NM 87117
(505) 841-0057/0054

Loring AFB Center
Embry-Riddle Aeronautical University
HQ 42nd CSG
Loring AFB, ME 04741
(207) 999-2606

Luke AFB Center
Embry-Riddle Aeronautical University
58 CSG/DPE
Building G#241
Luke AFB, AZ 85309
(602) 935-4000

March AFB Center
Embry-Riddle Aeronautical University
22 CSG/DPE
March AFB, CA 92518
(714) 655-4441

McClellan AFB Center
Embry-Riddle Aeronautical University
2852 ABG/DPE
Building 2014
McClellan AFB, CA 95652
(916) 643-5990/4776

Offut AFB Center
Embry-Riddle Aeronautical University
3902nd ABW/DPE
Offut AFB, NE 68113
(402) 292-6655

Pope AFB Center
Embry-Riddle Aeronautical University
317th CSG (MAC)
Pope AFB, NC 28308
(919) 497-3928

Virginia Center
Embry-Riddle Aeronautical University
P.O. Box 4315
Fort Eustis, VA 23604
(804) 887-0980

GRADUATE LOCATIONS, EUROPE

RAF Alconbury, UK
Embry-Riddle Aeronautical University
10 CSG/DPE
APO, NY 09238

Bitburg AFB, Germany
Embry-Riddle Aeronautical University
36 CSG/DPE
APO, NY 09132

RAF Lakenheath, UK
Embry-Riddle Aeronautical University
48 CSG/DPE
APO, NY 09179

Ramstein AFB, Germany
Embry-Riddle Aeronautical University
86 CSG/DPE
APO, NY 09012

Sembach AFB, Germany
Embry-Riddle Aeronautical University
601 CSG/DPE
APO, NY 09130

Spangdahlem AFB, Germany
Embry-Riddle Aeronautical University
601 CSG/DPE
APO, NY 09130

Stuttgart Army Air Field, Germany
Army Education Center
Echterdingen Airfield
Embry-Riddle Aeronautical University
APO, NY 09359

European Headquarters
Associate Dean, Graduate Programs, Europe
Embry-Riddle Aeronautical University
HQ USAFE/DPPEF
APO, NY 09633
Wiesbaden Civilian — (06121) 81 0608
Wiesbaden Military — Autovon 472 3723

RAF Bentwaters, UK
Embry-Riddle Aeronautical University
81 CSG/DPE
APO, NY 09755

Hanau, Germany
Hanau Education Center
Embry-Riddle Aeronautical University
Fliegerhorst Kaserne
APO, NY 09165

RAF Mildenhall, UK
Embry-Riddle Aeronautical University
513 CSG/DPE
APO, NY 09127

Rhein-Main AFB, Germany
Embry-Riddle Aeronautical University
435 CWG/DPE
APO, NY 09057

RAF Upper Heyford, UK
Embry-Riddle Aeronautical University
20 CSG/DPE
APO, NY 09194

Lindsey Air Station, Germany
Embry-Riddle Aeronautical University
7100 ABG/DPE
APO, NY 09633

RAF Woodbridge, UK
Embry-Riddle Aeronautical University
81 CSG/DPT
APO, NY 09405

Torrejon AFB, Spain
Embry-Riddle Aeronautical University
401 CSG/DPE
APO, NY 09283

ACADEMIC PROGRAM CALENDAR — DAYTONA BEACH CAMPUS*

	1982				1983				1984		
	Spring	Summer A	Summer B	Fall	Spring	Summer A	Summer B	Fall	Spring	Summer A	Summer B
New Students Arrive	1/4	5/3	6/28	8/29	1/3	5/2	6/27	8/29	1/3	4/30	6/25
Orientation for New Students	1/4-6	5/3-5	6/28	1/3-5	1/3-5	5/2-4	6/27	8/29-9/1	1/3-5	4/30-5/2	6/25
Registration	1/5-6	5/4-5	6/29	8/31-9/2	1/3-5	5/2-4	6/28	8/30-9/2	1/4-5	5/1-2	6/26
Classes Begin	1/7	5/6	6/30	9/3	1/6	5/5	6/29	9/2	1/6	5/3	6/27
Last Day for Late Registration and Adding Courses	1/15	5/8	7/2	9/7	1/10	5/9	7/1	9/6	1/12	5/7	6/29
Last Day of Final Examinations	4/21	6/25	8/19	12/16	4/21	6/24	8/18	12/15	4/19	6/22	8/16
Graduation	4/25	——	8/22	12/19	4/24	——	8/21	12/18	4/22	——	8/19

NOTE: The following holidays will be honored: Washington's Birthday, Good Friday, Memorial Day, Independence Day and Thanksgiving.

*Program calendars for other locations may be obtained by contacting the appropriate Program Director as listed on Pages 3, 4 and 5.

A UNIVERSITY LIKE NO OTHER

Embry-Riddle Aeronautical University is unique among higher education institutions. It is the world's only accredited, civilian, totally aviation-oriented university. Since its founding more than a half century ago, Embry-Riddle has directed its efforts toward providing the finest, most professional and comprehensive aviation education leading to hundreds of career opportunities. Embry-Riddle alumni now pursue aviation careers with organizations throughout the United States and the world.

Embry-Riddle's 86-acre, Daytona Beach, Florida campus is located at the Daytona Beach Regional Airport. Approximately 5,000 students are enrolled in associate, bachelor's and master's level degree programs.

Embry-Riddle undergraduate programs were introduced at the E-RAU Campus in Prescott, Arizona in 1978. At this 510-acre campus, students have the opportunity to enroll in many of the University's associate and bachelor's degree programs. Approximately 1000 students are currently enrolled.

Since 1970 the University has offered its educational programs at selected off-campus locations. In 1979 this network, which consists of Centers located at military installations in the United States, Europe and Educational Consortia in cooperation with other regionally accredited institutions, was established as the International Campus of the University. Approximately 5,000 students are enrolled in aviation educational courses and programs at International Campus locations. All graduate program operations, including those in Daytona Beach, form a part of the International Campus. The College of Continuing Education administers graduate programs at all locations except Daytona Beach. The Daytona Beach program is administered by the College of Graduate Studies.

PHILOSOPHY AND PURPOSE

We at Embry-Riddle Aeronautical University accept as our responsibility the tasks of:

- preparing students for professional careers in aviation
- maintaining close liaison with all elements of the aviation industry
- providing knowledgeable, well-rounded citizens and community leaders.

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

1. To prepare students to make effective contributions to aviation and be immediately productive.
2. To develop within each student the ability to evaluate objectively the economic, political and moral aspects of man and society.

3. To provide the facilities, faculty and staff for the professional and educational climate needed to inspire students to be inquisitive, professional and skillful in their chosen aviation fields.
4. To maintain the highest standards for professional, aviation-oriented educational programs.
5. To conduct a continuous and meaningful re-evaluation of all educational courses and programs.
6. To instill in students a keen awareness of themselves and their society through instruction in the humanities and social sciences.
7. To support and promote research activities designed to increase understanding in all areas of aviation higher education.

To further support these objectives, Embry-Riddle is establishing "Centers of Expertise" which encompass virtually all aspects of aviation. Each of these Centers is comprised of eight to 10 recognized experts in a particular aviation subject area, who are chosen from the aviation community at large. The "Centers of Expertise" are available to support all operations of the University. In terms of graduate programs, they guide the graduate level curriculum, assist in locating and providing instructor support materials and assist the University in selecting and procuring the latest resource material.

ACCREDITATION AND AFFILIATIONS

Embry-Riddle Aeronautical University is accredited by the Southern Association of Colleges and Schools. B.S. degrees in engineering are accredited by the Accreditation Board for Engineering and Technology, the national engineering accrediting agency. Federal Aviation Administration (FAA) approved programs include Maintenance Technology (Airframe and Powerplant), Flight courses leading to private, Commercial, Instrument, Multi-Engine, Flight Instructor, Instrument Flight Instructor and Aircraft Dispatcher certificates and ratings and aeronautical science academic courses.

Academic programs are approved by the State of Florida and all other relevant states for veterans training.

The University sponsors institutional and/or individual membership in various professional organizations including the American Institute of Aeronautics and Astronautics, National Business Aircraft Association, University Aviation Association, American Society for Aerospace Education, National Air Transportation Association, American Management Association, Commuter Airline Association, Human Factors Society, Experimental Aircraft Association and the American Society for Engineering Education.

STATEMENT OF POLICY

Embry-Riddle adheres to the principle of equal education and employment opportunity without regard to race, sex, color, creed, or

national origin. This policy extends to all programs and activities involving or supported by the University.

The University admits students of any race, color, national and ethnic origin to all the rights, privileges, programs, and activities generally accorded or made available to students at the school. It does not discriminate on the basis of race, color, national and ethnic origin in administration of its educational policies, admissions and policies, scholarship and loan programs, and athletic and other school-administered programs.

Embry-Riddle Aeronautical University does not discriminate on the basis of handicap in the recruitment and admission of students, the recruitment and employment of faculty and staff or the operation of any of its programs and activities, as specified by federal laws and regulations. The designated coordinator for University compliance with Section 504 of the Rehabilitation Act of 1973 is Dr. Jeffrey Ledewitz, Chancellor, Vice President and Director of University Administration, (904) 673-3180, Ext. 229.

The University reserves the right to adjust tuition and fees as it deems necessary.

This catalog is designed for the two-year period stated on the cover. It is not intended that the provisions of this catalog constitute the statement of the terms of an irrevocable contract between the student and the University. The University reserves the right at all times to change any provision or any requirement stated in this catalog and it further reserves at all times the right to require any student to withdraw for cause.

meeting the demand for aviation managers

Creative, well-trained managers are needed in the field of aviation. The demand is explosive and will continue through this century. Qualified men and women contemplating graduate study in aviation management are on the threshold of burgeoning career opportunities in aviation.

The problems faced by aviation managers in directing the operations of business, government, public and private enterprises grow more complicated. Solutions to problems require the application of analytical techniques and skills by creative, well-trained aviation managers. Aviation managers will lead the development of new technologies and new services to meet the unprecedented technical and management demands of this century.

The primary goal of the College of Graduate Studies is to prepare our graduates for executive positions in the aviation industry. We wish to become an integral part of your career development.

As an alumnus you will attain a professional association with the world's acknowledged leader in aviation education — Embry-Riddle Aeronautical University.

Welcome to the College of Graduate Studies.

William L. March

William L. March, Dean

Mr. R. Bruce Morrin, Associate Dean of Graduate Studies.

Admission to the University

Admission Requirements

All candidates for admission to Embry-Riddle Aeronautical University masters degree programs are evaluated by the Graduate Student Admissions Committee.

Prospective students who meet the following criteria will be admitted to graduate study with Embry-Riddle Aeronautical University:

1) Have a bachelor's degree from a regionally accredited institution.
2) Meet at least one of the following academic criteria:
   a) A minimum 2.50 cumulative grade point average in undergraduate academic work.
   b) A minimum total score of 460 on the Graduate Management Admissions Test (GMAT).
   c) A minimum total verbal and quantitative score of 1050 on the Graduate Record Examination (GRE).
   d) A minimum 3.00 cumulative grade point average on at least 12 previous semester hours of graduate work.

Students who fail to meet the above criteria, but whose background and/or life experience warrant "special consideration" may apply to the E-RAU Graduate Student Admissions Committee for admission in Special Student status.

ADMITTANCE TO DEGREE CANDIDACY

Students will be admitted to degree candidacy upon completion of the following requirements:

1) Satisfaction of foundation knowledge requirements by one of the methods described in the section entitled, "Foundation Requirements."
2) Attainment of a minimum 3.00 cumulative grade point average for the first 12 credit hours of Embry-Riddle graduate work.

Students who have not been admitted to degree candidacy by the time they have completed 18 credit hours of Embry-Riddle graduate work will be placed on probation. Enrollment in additional graduate courses will be denied until foundation knowledge requirements have been satisfied.

SPECIAL STUDENTS

A student may enroll in courses as a special student if he/she falls into one of the following categories:

a) is a graduate of a regionally accredited college or university and does not intend to work toward an Embry-Riddle graduate degree, but who possesses the necessary foundation knowledge requirements/prerequisites for the course(s) and a cumulative grade point average of 2.50 or better in undergraduate studies.

b) intends to work toward a graduate degree, but does not meet the admissions criteria listed previously. Students in this category may petition the Graduate Student Admissions Committee for admission in Special Student Status. They must provide the Committee with a personally written statement supporting their petition and a written recommendation from the Center Director/Associate Dean for their location. Students accepted as Special Students in this category will be admitted to degree candidacy upon meeting the criteria listed for degree candidacy.

c) is an undergraduate student at a regionally accredited college or university, is within 30 credit hours of graduation, and has a cumulative grade point average of 3.00 or better. Course enrollments will be limited to those for which all foundation knowledge and/or prerequisites have been satisfied. The total course load credit hours may be limited at the discretion of the Center Director/Associate Dean.

FOUNDATION REQUIREMENTS

Foundation knowledge requirements are considered an integral part of all Embry-Riddle masters degree programs and are mandatory for completion of masters degree requirements. These requirements must be satisfied prior to attempting more than 18 graduate credit hours, even though they may not be required for any specific course in the program.

Foundation knowledge of concepts must be demonstrated in the areas of basic management principles, economics, accounting and statistics and must be demonstrated in one of the following ways:

a) Satisfactory completion of three undergraduate credit hours in management principles, six undergraduate credit hours in economics, six undergraduate credit hours in accounting *(Not required for MAS degree), and three undergraduate credit hours in statistics at a regionally accredited institution. The following Embry-Riddle undergraduate courses fulfill MBA-A, MAM and MAS degree foundation requirements.
tion requirements:

Economics:
EC 110 — Macroeconomics, and EC 210 — Microeconomics
***Accounting:**
MS 110 — Accounting I, and MS 112 — Management Accounting
Statistics:
MA 211 — Statistics with Aviation Applications OR
MA 222 — Business Statistics
Management:
MS 200 — Principles of Management OR
MS 205 — American Business Enterprise.

For the Master of Aeronautical Science degree student, the above foundation courses *(except for the accounting requirements) must be completed and, in addition, the student must possess a Commercial Pilot Certificate with instrument rating or complete the academic training equivalent to the Embry-Riddle undergraduate courses listed below:

AS 100 Foundations of Aeronautics
AS 102 Navigation I
AS 103 Flight Rules and Regulations
AS 201 Meteorology
AS 202 Navigation II
AS 203 Aircraft Engines/Reciprocating
AS 210 Aircraft Systems and Components
AS 311 Aircraft Engines/Turbine

*Foundation requirements for the MAS degree do not include accounting.

A student possessing a private pilot license and instrument rating will be required to attain a commercial license or to meet prerequisites equivalent to AS 210 and AS 311 listed above prior to admittance to degree candidacy. A student with a commercial pilot license but no instrument rating will be required to attain an instrument rating or meet prerequisites equivalent to AS 201, AS 202 and AS 311 listed above prior to admittance to degree candidacy.

U.S. Military trained personnel who hold fixed-wing pilot ratings from their respective services meet the aviation requirements for entry into the Master of Aeronautical Science degree program. Military trained rotary-wing pilots who possess a Standard Instrument Rating, or who successfully complete the fixed-wing instrument examination, also meet aviation requirements for entry into this degree program.

U.S. Air Force-rated navigators must demonstrate knowledge of reciprocating and turbine engine operations and aircraft systems and components prior to admittance to degree candidacy in the Master of Aeronautical Science degree program. Embry-Riddle Aeronautical University undergraduate courses which satisfy these requirements are:

AS 203 Aircraft Engines/Reciprocating
AS 210 Aircraft Systems and Components
AS 311 Aircraft Engines/Turbine

b) Evaluation of life experience for foundation knowledge requirements by the Dean of the College of Graduate Studies.
c) Successful completion of a by-pass examination prepared by the College of Graduate Studies in one or more foundation knowledge areas.
d) Satisfactory scores meeting established norms on appropriate

examinations administered by CLEP or DANTES.

e) Satisfactory completion of appropriate independent study courses administered by the International Campus External Degree Program.

f) Satisfactory completion of Special Topics courses approved by the Dean of the College of Graduate Studies.

PREREQUISITES

A number of the Masters level elective courses have prerequisites which may or may not include the foundation knowledge requirements described above. Applicable foundation knowledge requirements and other prerequisites stated in the Course Descriptions Chapter of this catalog must be satisfied prior to enrolling in the course.

Application Procedures

GENERAL REQUIREMENTS (U.S. Citizens)

Students should provide the appropriate Director or Associate Dean with the following materials/documents a *minimum of* 15 *days prior* to enrollment:

1. Completed application form.
2. An official transcript mailed directly to the appropriate Embry-Riddle location, from each college or university attended. Daytona Beach students will have transcripts mailed to the International Campus Admissions Office, Miami students to the Miami Education Consortium, and all others to the appropriate Center Director.*
3. If applicable, certification of experience to substantiate understanding of concepts of one or more foundation knowledge/prerequisite subject areas.
4. If applicable, an official test report of DANTES and/or CLEP examinations to substantiate understanding of concepts of one or more foundation knowledge and/or prerequisite subject areas.
5. If applicable, a copy of FAA pilot certificates or certification of military pilot qualifications.
6. An application fee of $25 (non-refundable).

*Students will be admitted in "Special" status until official transcripts and records confirm initial counseling discussions. To assure continuing enrollment, all official records must be received prior to the end of the first term in which the student is enrolled.

INTERNATIONAL STUDENTS

(Non U.S. Citizens who do not have permanent resident status)

Currently, international students may enroll only at the Daytona Beach Campus, the Miami Education Consortium or at certain Euro-

pean locations. International students desiring to enroll at European locations should contact the location director concerned. The credentials of applicants from foreign countries are evaluated in accordance with the general regulations governing admission. Upon arrival in the United States, international students may be required to take an English Language Test at either the Daytona Beach or Miami Campus. Results of this test will determine whether or not a student must undergo English Language training prior to enrollment.

International students must provide the appropriate Director or Associate Dean with the following materials/documents *a minimum of six months* prior to enrollment:

1. Items 1 through 3 of General Requirements (U.S. Citizens).
2. Application fee of $50 — non-refundable.
3. Results of either the Test of English as a Foreign Language (TOEFL) or the Michigan Test of English Language Proficiency (MTELP). Minimum required score on the TEOFL is 500 or higher and on the MTELP, 85 or higher. This requirement applies only to those students who are graduates of an institution where English was not the language of instruction in all disciplines.
4. Written advance statement of financial support for the necessary U.S. dollars to cover all tuition and living expenses. After receiving the application for admission, the Daytona Beach or Miami Graduate Student Office, as appropriate, will inform the student, by letter, of the amount of financial support necessary. The statement of financial support is an important factor in determining acceptance.
5. Upon acceptance for admission, a total advance deposit of $1550 in U.S. currency for students at the Daytona Beach location. Of this amount, $500 will be retained in an emergency student account to help defray any emergency travel or other emergency expenses. The student will be required to maintain a $500 balance in this account while enrolled. The balance in this account will be refunded to the student at the end of the trimester in which he earns his diploma if he has no other indebtness to the university. The remainder of the $1550 deposit ($1050) will be credited to the student's account and applied toward tuition and textbook expenses during the initial term. Total deposit must be received before the Certificate of Eligibility (Form I-20) will be forwarded. International students attending in Miami or in Europe, contact local graduate program representatives for information on deposits.

NOTE: Applicant should present Certificate of Eligibility to nearest office of the American Embassy or Consulate to obtain student visa. Certificate of Eligibility must be in possession of international students prior to departure from their country. A change of immigration

status from tourist visa (or other) to student visa is not possible after the student's arrival in the United States.

TRANSFER STUDENTS

Transfer students should provide the appropriate Director/Associate Dean with the following materials/documents.

1. Items 1-6 of General Requirements — (U.S. Citizens).
2. Official transcripts, sent *directly* from the Registrar of each college or university attended.
3. If requested, the Catalogs from each institution from which he transfers, marked to indicate courses taken. Transfer credit will be accepted as indicated on pages 37 and 38.

Dr. John E. Engel, Program Chairman, Management Science and Mr. Randall W. Kirk, Program Chairman, Aeronautical Science.

Academic Programs

INTRODUCTION

Embry-Riddle Aeronautical University Master's degree programs are designed to provide leaders and potential leaders in the field of aviation with relevant, meaningful learning experiences under competent guidance. The programs seek to provide learning experiences which will enable the graduate to apply current technology, methodology, and management techniques to problem solving in aviation. In addition, the programs seek to broaden the student's understanding of the dimensions and complex interrelationships of the aviation industry. Note that not all degree programs are available at all locations.

It is highly desirable that the professional experiences of students be acknowledged as having intrinsic value in their total professional preparation. Consequently, the graduate programs seek to capitalize on student employment experiences in aviation. Embry-Riddle graduate students in many cases have already established themselves in aviation careers and bring the experience and background of their work and/or professional training to the classroom to the mutual benefit of all. The graduate programs seek to cement the theoretical and practical experiences of both faculty and students in a meaningful fashion, and thereby bring about a true synthesis of professional preparation and experience.

Embry-Riddle graduate programs deal with a dynamic aviation industry. For example, deregulation and energy problems, and safety in a crowded environment continuously force modifications to aviation practices; formal textbooks and traditional research reports quickly become outdated. This presents the Embry-Riddle graduate student and faculty with a constant challenge in finding current material — not only from recent publications but directly from various industry sources. The Embry-Riddle College of Graduate Studies continuously strives to develop and disseminate current, relevant instructional support materials.

PROGRAM FEATURES

The programs have been designed to accommodate mature working adults.

- Applicants holding a bachelor's degree from a regionally accredited institution in any area of study may enter at the graduate level and complete a degree program with appropriate foundation knowledge/prerequisites.
- Students lacking undergraduate foundation knowledge/prerequisites may enroll in other graduate courses while fulfilling these requirements.
- Up to 12 credit hours of relevant study may be transferred from other accredited graduate programs.
- Executives who are acknowledged leaders in their respective

aviation fields serve as adjunct faculty.

- Three, four or five terms are offered annually — depending on program location — to enable full-time students to complete the program within one year. Part-time students can complete the program in less than two years at most locations.
- Most class periods are taped "live," and stored on cassette tapes, enabling students to make up classes they are unable to attend because of occupational commitments.
- Most classes are scheduled evenings and weekends to meet the needs of working students.
- Instructional methodology may include weekend seminars, special projects, traditionally scheduled class meetings or combinations of these.
- Individual counseling by the Center Director or Associate Dean of Graduate studies is available to all students.
- Small class size permits student-teacher interaction and maximum sharing of opinions, experience and knowledge.
- Assistance is available to students in areas such as veteran's benefits, loans and housing.
- Opportunity for part-time jobs in the local aviation community may be available while enrolled in the program.

Degree Programs

MASTER OF BUSINESS ADMINISTRATION IN AVIATION (MBA/A)

The Master of Business Administration in Aviation (MBA/A) program is a professional degree primarily designed to produce practitioners in business analysis and administration who possess the knowledge and skills necessary to apply current business practices, methodology, and techniques to aviation operations. The aviation business administrator is one who can coordinate, evaluate, integrate, and direct the activities of specialists toward the goals and objectives of an organization.

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

DEGREE REQUIREMENTS

Thirty-six semester hours of graduate study are required. In addition to demonstrating an understanding of foundation knowledge concepts and certain specific elective prerequisites, eighteen credit

hours are required. Electives are grouped by whether or not they are specifically aviation oriented. At least twelve credit hours must be selected from aviation related electives. Required core courses emphasize the tools and techniques of management; most electives emphasize the application of these techniques to more specific aviation problems.

CORE COURSES
MS 610 Advanced Organization Theory
MS 611 Quantitative Methods in Business
MS 612 Management Information Systems
MS 614 Marketing Analysis
MS 618 Corporate Finance
MS 635 Business Policy Analysis

ELECTIVE COURSES (Select 12 to 18 credit hours)
MS 500 Government Role in Aviation
MS 570 International Developments in Aviation
MS 601 Operations Research in the Airline Industry
MS 602 Principles of Air Transportation
MS 609 Airline Operations and Management (formerly MS 605)
MS 615 Current Problems in Aviation
MS 625 Airline Marketing Management
MS 632 Aviation Labor Relations
MS 645 Airport Management
MS 655 Aviation Law and Insurance
MS 695 Special Project
AS 515 Simulation in Aviation
AS 530 Corporate Aviation Operations
AS 606 Aviation Control/Communication Systems
AS 608 Aircraft Accident Investigation and Aviation Safety
AS 609 Aircraft Maintenance Management
AS 634 Aviation Psychology
AS 636 Advanced Aviation Planning Concepts
AS 640 Supply and Distribution in the Aviation Industry
AS 641 Production and Procurement in the Aviation Industry
AS 642 Research and Development for the Aviation Industry

ELECTIVE COURSES (Select 0 to 6 Credit Hours)
MS 603 Analysis of Data Base Management Systems
MS 604 Computer Systems Modeling
MS 605 Data Communications and Network Systems
MS 606 Computer Based Gaming for Data Analysis
MS 608 Advanced Topics in Computers
MS 613 Personnel Management and Industrial Relations
MS 620 Managerial Psychology

MS 638 Managerial Economics

NOTE: Not all elective courses are available at all Graduate Program locations.

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

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

MASTER OF AVIATION MANAGEMENT (MAM)

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

The program is designed to produce practitioners in aviation management who possess knowledge and skills necessary to apply state-of-the-art business practices, methodology, and techniques to aviation operations. The aviation manager is one who can coordinate the activities of supervisors and specialists.

The MAM core curriculum consists of broad areas in aviation management/operations designed to produce generalists in aviation management; emphasis is on practical applications of management theory to aviation problems. This program enables the student to obtain a graduate degree directly related to his occupation, as well as gain a comprehensive understanding of managerial principles applicable to other industries. The individual who possesses this degree has a broad, diverse foundation in aviation management and is prepared to operate and/or manage in various positions or assignments.

DEGREE REQUIREMENTS

Thirty-six semester hours of graduate study are required. In addition to demonstrating an understanding of foundation knowledge concepts and certain specific elective course prerequisites. Eighteen credit hours are required core courses; the remaining 18 hours are electives. At least six credit hours must be selected from aviation related electives. Required core courses emphasize broad areas of aviation management; electives emphasize more specific aspects of management and the application of management techniques to aviation problems.

CORE COURSES
MS 611 Quantitative Methods in Business
MS 612 Management Information Systems
MS 613 Personnel Management and Industrial Relations
MS 615 Current Problems in Aviation

In addition, the student will select two of the following courses:
MS 602 Principles of Air Transportation
MS 609 Airline Operations and Management (formerly MS 605)
MS 618 Corporate Finance
MS 645 Airport Management
MS 655 Aviation Law and Insurance
AS 608 Aircraft Accident Investigation and Aviation Safety

ELECTIVE COURSES (Select 9 to 18 Credit Hours)
MS 500 Government Role in Aviation
MS 570 International Developments in Aviation
MS 601 Operations Research in the Airline Industry
MS 609 Airline Operations and Management (formerly MS 605)
(If not taken as a core)
MS 625 Airline Marketing Management
MS 632 Aviation Labor Relations
MS 645 Airport Management (If not taken as a core)
MS 655 Aviation Law and Insurance (If not taken as a core)
MS 695 Special Project
AS 515 Simulation in Aviation
AS 530 Corporate Aviation Operations
AS 606 Aviation Control/Communication Systems
AS 608 Aircraft Accident Investigation and Aviation Safety
(If not taken as a core)
AS 609 Aircraft Maintenance Management
AS 634 Aviation Psychology
AS 636 Advanced Aviation Planning Concepts
AS 640 Supply and Distribution in the Aviation Industry
AS 641 Production and Procurement in the Aviation Industry
AS 642 Research and Development for the Aviation Industry

ELECTIVE COURSES (Select 0 to 9 Credit Hours)
MS 603 Analysis of Data Base Management Systems
MS 604 Computer Systems Modeling
MS 605 Data Communications and Network Systems
MS 606 Computer Based Gaming for Data Analysis
MS 608 Advanced Topics in Computers
MS 610 Advanced Organization Theory
MS 614 Marketing Analysis
MS 618 Corporate Finance (If not taken as core)

MS 620 Managerial Psychology
MS 635 Business Policy Analysis
MS 638 Managerial Economics

NOTE: Not all elective courses are available at all Graduate Program locations.

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

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

MASTER OF AERONAUTICAL SCIENCE (MAS)

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

This program is designed to produce technical managers in the field of aeronautical science. The program emphasizes development of knowledge and skills necessary to apply current management practices to the technical fields of aviation.

The program provides students with an opportunity to achieve individual fulfillment and acquire the tools and talents required for success as a professional in the aviation industry. Program emphasis is placed on the interaction of different facets of the aviation industry and their interrelationship with other sectors of the national economy.

DEGREE REQUIREMENTS

Thirty-six semester hours of graduate study are required. In addition to demonstrating an understanding of foundation knowledge concepts and certain specific elective course prerequisites, eighteen credit hours are required core courses; the remaining 18 hours are electives. Of the six elective courses, at least two must be selected from Aeronautical Science courses. Required courses emphasize technical knowledge of aviation safety, communications, psychology, maintenance and aircraft systems as well as current problems in aviation. The electives permit concentrations or a cross-section selection of courses concerned with various aspects of aviation operations, logistics, computer use or management.

CORE COURSES

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

ELECTIVE COURSES (Select 18 Credit Hours)

AS 509 Advanced Aerodynamics
AS 510 Advanced Aircraft Performance
AS 512 Air Carrier Operations
AS 515 Simulation in Aviation
AS 518 Systems and Regulations for Operation of the Boeing 727
AS 519 Cockpit Procedures for Operation of the Boeing 727
AS 520 Simulator Training and Flight Check on Boeing 727 Systems and Procedures
AS 530 Corporate Aviation Operations
AS 549 Pilot Requirements for Operation of the Boeing 727
AS 601 Advanced Meterology
AS 636 Advanced Aviation Planning Concepts
AS 640 Supply and Distribution in the Aviation Industry
AS 641 Production and Procurement in the Aviation Industry
AS 642 Research and Development for the Aviation Industry
AS 695 Special Project
MS 500 Government Role in Aviation
MS 570 International Developments in Aviation
MS 601 Operations Research in the Airline Industry
MS 602 Principles of Air Transportation
MS 603 Analysis of Data Base Management Systems
MS 604 Computer Systems Modeling
MS 605 Data Communications and Network Systems
MS 606 Computer Based Gaming for Data Analysis
MS 608 Advanced Topics in Computers
MS 609 Airline Operations and Management (formerly MS 605)
MS 610 Advanced Organization Theory
MS 611 Quantitative Methods in Business
MS 612 Management Information Systems
MS 613 Personnel Management and Industrial Relations
MS 614 Marketing Analysis
MS 618 Corporate Finance
MS 620 Managerial Psychology
MS 625 Airline Marketing Management
MS 632 Aviation Labor Relations
MS 635 Business Policy Analysis
MS 638 Managerial Economics

MS 645 Airport Management
MS 655 Aviation Law and Insurance

All courses except those specified in the course descriptions are non-sequential and are assigned a credit hour value of three semester hours, except for the following: AS 519, two credit hours; AS 520, one credit hour. New students may enroll and start the program with any course for which the foundation knowledge requirements and prerequisites have been satisfied.

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

NOTE: Not all elective courses are available at all Graduate Program locations.

SPECIAL FLIGHT AND RELATED COURSES

Embry-Riddle offers the following special flight and ground school courses for the student who desires an accelerated training program meeting Federal Aviation Administration (FAA) Certificate requirements, but who is not enrolled as a student in the Master of Aeronautical Science degree program. These are non-credit courses. For further information on these courses contact the Dean of the Graduate College.

FT 518 Flight Engineer, FAA Written Preparation
FT 519 Advanced Flight Engineer I
FT 520 Advanced Flight Engineer II
FT 549 Airline Transport Pilot, FAA Written Preparation

Dr. Frank P. Jozsa, Associate Professor, Management Science and Mr. Rudolph E.M. Knabe, Associate Professor, Aviation Management.

Course Descriptions

Aeronautical Science
Management Science

This chapter provides descriptions of courses specified as requirements and/or electives for the various degree programs. Foundation knowledge and/or prerequisites are specified. Foundation knowledge requirements may not be waived. The Dean of the Graduate College may waive specific course prerequisites.

AERONAUTICAL SCIENCE

AS 509 — Advanced Aerodynamics **3 Credits**
A study of current flight problems and applications, transonic and supersonic aerodynamics, principles of aircraft stability and control and operational strength considerations. Upon completion, the student should be able to systematically analyze pilot techniques in order to optimize accuracy and efficiency, describe supersonic and transonic flow characteristics and operating limitations, describe longitudinal, directional and lateral stability and control principles and systems, and state operational strength considerations and design requirements. Prerequisites: An understanding of basic concepts in Aerodynamics, Applied Physics, Algebra, Trigonometry and Introductory Calculus equivalent to E-RAU courses AS 309, PS 104, MA 111 and MA 112.

AS 510 — Advanced Aircraft Performance **3 Credits**
An analysis of performance characteristics for transonic, supersonic and near space air vehicles powered by jet or rocket engines. Problems related to high speed and high altitude flight such as aeroelastic effects, compressibility drag, Reynold's Number effects, ram pressure rise and aerodynamic heating are explored in depth. Prerequisite: Understanding concepts of aircraft performance equivalent to E-RAU course AS 310, or ATP Certificate with jet type rating.

AS 512 — Air Carrier Operations **3 Credits**
An examination of air carrier flight operations from the standpoint of both the ground based flight dispatcher and the cockpit flight crew. Portions of Part 121 of the Federal Aviation Regulations pertaining to operations and large aircraft loading limitations and computations will be covered. Performance considerations essential to flight planning will be analyzed using aircraft flight manual data. Flight planning problems involving loading, performance, weather conditions and routing considerations will be dealt with using typical airline planning forms and manifests. Prerequisites: Understanding Federal Aviation Regulations, concepts of meteorology, navigation, and aircraft performance equivalent to E-RAU courses AS 103, AS 201, AS 202 and AS 310.

AS 515 — Simulation in Aviation **3 Credits**
A comprehensive examination of all aspects of simulation in modern

aviation. The course includes an investigation of simulator use as a substitute for flight training and the bearing this use has on safety and training costs. The course will provide an in-depth look at the history and development of simulation, the "state of the art," research and development in simulation and the outlook for the future. Analyses of different flight training programs and methods will be made to include validation of greater emphasis on simulation, the most efficient ratio of simulator time to actual flight time in a given program and what maneuvers, if any, can be taught entirely through simulation. Prerequisites: None.

AS 518 — Systems and Regulations for Operations of the Boeing 727 **3 Credits**

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

AS 519 — Cockpit Procedures for Operation of the Boeing 727 **2 Credits**

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

AS 520 — Simulator Training and Flight Check for Boeing 727 Systems and Procedures **1 Credit**

Training in a Boeing 727-100/200 series aircraft simulator in preparation for the FAA Flight Engineer Turbo Jet aircraft check ride on the B-727 aircraft. During the simulator training the student will perform the duties of a Flight Engineer during normal/abnormal/and emergency conditions. Prerequisite: Cockpit Procedures for Operation of the Boeing 727 — AS 519. (Lab fee required.)

AS 530 — Corporate Aviation Operations **3 Credits**

An examination of the establishment and operation of a corporate flight department. Operational and administrative factors peculiar to

corporate aviation are analyzed. The procedures and techniques generally accepted as standards by professional corporate operations are treated in relation to independent corporate experiences. The student will be presented with a practical view of the corporate aviation environment and should acquire an appreciation for its mission of management mobility and an understanding of how to use the resources available to accomplish it. Prerequisites: None.

AS 549 — Pilot Requirements for Operation of the Boeing 727 **3 Credits**

Preparation for the Airline Transport Pilot written examination. Upon successful completion of the course, arrangements are made for the student with sufficient flight hours to take the written examination required for the ATP Certificate. Prerequisite: Commercial Pilot Certificate with instrument rating or military equivalent.

AS 601 — Advanced Meteorology **3 Credits**

A strengthening of the meteorological background of the aviation professional. Course includes the derivation and application of the hydrostatic equation, study of atmospheric kinematics, derivation of the equation of continuity, and development of the thermal wind. Fundamental analysis, high altitude meteorology, radar meteorology, air pollution and solar aspects are studied. Current weather is analyzed and basic forecasting is accomplished utilizing an actual weather facility. Prerequisites: Understanding concepts of meteorology, basic calculus, applied physics equivalent to E-RAU courses AS 201, MA 112, PS 104 and a Commercial/Military Pilot Certificate with instrument rating.

AS 606 — Aviation Control/Communication Systems **3 Credits**

A detailed analysis of current and future developments and trends in the control of air traffic. Upon completion of the course, the student should be able to understand current capabilities and future requirements of ground based and airborne equipment for the control of aircraft. Problems of air traffic control and communications in an overcrowded environment will be examined, including solutions based on ground and airborne computers, satellite communications and telemetry, and the application of Area Navigation Systems (RNAV). Prerequisites: Understanding Federal Aviation Regulations and concepts of instrument navigation equivalent to E-RAU courses AS 103 and AS 202, or Commercial/Military Pilot Certificate with instrument rating.

AS 607 — Advanced Aircraft Systems **3 Credits**

An examination of current "state-of-the-art" aircraft systems and a projection of current research trends to future air vehicle requirements and applications. Upon successful completion of the course, the student should be able to understand the capabilities and limitations of current aircraft propulsion, electrical, environmental, control

and hydraulic systems and sub-systems, and predict their future development to meet tomorrow's requirements. Prerequisite: Understanding concepts of aircraft systems equivalent to E-RAU course AS 210.

AS 608 — Aircraft Accident Investigation and Aviation Safety **3 Credits**

A critical analysis of selected aircraft accidents including an in-depth evaluation of cause factors. Particular emphasis is placed on the human factors of the flight crew and support activities which may contribute to accidents in transport category and general aviation operations. The student will identify some of the problems confronting aviation safety and develop possible solutions to these problems. He will develop a flying safety program for flight operations that can be used as an effective tool of management in reducing aircraft accidents. Prerequisites: None.

AS 609 — Aircraft Maintenance Management **3 Credits**

A detailed analysis of maintenance regulations, structure, capabilities and limitations of maintenance organizations, maintenance functions accomplished at depot and airport levels, and maintenance inspection and reporting requirements. The student will analyze preventive and corrective maintenance inspections conducted by commercial airlines and general aviation operators. Included are case studies on maintenance actions to be taken in typical and unique situations. A major objective is to understand the interface of maintenance functions with supply operations and training activities. Prerequisites: None.

AS 634 — Aviation Psychology **3 Credits**

An examination of current psychological theories and their practical application to real world environments. The human factors required to structure flight deck displays that transfer information realistically under various time compression requirements. Applying cognitive, procedural processes with psycho-motor responses to improve human resource management. Measurement of cockpit workloads to improve performance levels associated with multiple task variants, thereby reducing causative pilot error potential. Optimum utilization of high fidelity simulators with computer generated imagery (CGI) to reinforce recognition and responses (R&R) techniques. Second level training through computer assisted instruction (CAI) to enhance transfer training concepts. Prerequisite: Commercial/Military Pilot with instrument rating.

AS 636 — Advanced Aviation Planning Concepts **3 Credits**

Planning and decision-making for current or potential aviation managers/decision-makers. The course provides the student with an understanding of the various types and sources of data which the aviation planner/decision-maker uses in carrying out his responsibilities. An analysis is

made of data required to reach decisions on such questions as airline route structure development and expansion, fleet modernization and anticipated markets. The student will study the application of computer technology, models, simulation, heuristics, economic analysis, value theory and payoff tables as tools to aid the aviation planner/decision-maker. Prerequisites: Understanding concepts of management and economics equivalent to E-RAU courses MS 200 or MS 205, EC 110 and EC 210.

AS 640 — Supply and Distribution in the Aviation Industry 3 Credits A treatment of the control and distribution of aircraft, aircraft parts and components for aviation operations ranging from the fixed base operator to worldwide commercial airline operations. The structure of aviation supply organizations, priority systems, cost categories, inventory control and the application of electronic data processing equipment to the supply and distribution functions are discussed. Supply management is analyzed from the standpoint of economy and customer satisfaction through case studies of different aviation endeavors, ranging from the typical airline operation to the aircraft supply and distribution services provided under the terms of contracts between aircraft companies and foreign governments. Prerequisites: Understanding concepts of management equivalent to E-RAU courses MS 200 or MS 205.

AS 641 — Production and Procurement in the Aviation Industry 3 Credits
The objective of this course is to provide an understanding of the production and procurement process of air carrier transport aircraft from the viewpoint of the purchaser as well as the ultimate operator; the manufacturer as the producer and warrantor; and the government (FAA and CAB) as the certificator and regulator. The process will be examined from the demand analysis, purchase contracting, manufacturing, marketing, certification, pre-delivery operations, and service introduction viewpoints from both the manufacturer's and airline's perspective. Prerequisites: Understanding concepts of management and economics equivalent to E-RAU courses MS 200 or MS 205, EC 110 and EC 210.

AS 642 — Research and Development for the Aviation Industry 3 Credits
An analysis of the types and sources of research for the aviation industry. Distinctions are drawn between research and development and emphasis is placed on future developments to meet changing requirements. The structure of the aviation industry, educational institutions and specified corporations for basic and applied research are treated. An analysis is made of how research is funded, specifications determined, and the relationship of research and development to procurement and production. Prerequisites: Understanding con-

cepts of management and economics equivalent to E-RAU courses MS 200 or MS 205, EC 110 and EC 210.

AS 695 — Special Project **Variable**
Students may, with the approval of the Graduate Program Director, elect to perform special directed analysis and/or independent studies. The student will develop a detailed proposal of his planned study/research and present it to the Graduate Program Director/Associate Dean for approval not less than three weeks prior to registration/enrollment in the course. Prerequisite: Approval of the Program Director/Associate Dean.

MANAGEMENT SCIENCE

MS 500 — Government Role in Aviation **3 Credits**
The evolution of Government institutions and policies affecting the promotion and regulation of aviation and changes thereto which have been introduced following deregulation. A look at interactions between the Government and the aviation industry. An evaluation of social and aviation goals and the role of Government in their achievement. Prerequisites: None.

MS 570 — International Developments in Aviation **3 Credits**
A comprehensive description and analysis of international developments in aviation today, with particular attention to the economic problems of U.S. international air services, the cooperative efforts of nations in providing safe and standardized airways and airports throughout the world. The social, economic and political goals of the United States and other countries as they affect aviation. The methodologies needed in resolving international disagreements. Prerequisites: None.

MS 601 — Operations Research in the Airline Industry **3 Credits**
Operations research has played a major part in optimization of resources in the airline industry for nearly 25 years. This course will familiarize the student with operations research techniques used by the airlines in the areas of marketing, route scheduling, fleet planning, crew scheduling, inventory management, manpower planning and reservations. Students will be taught how to apply the more familiar techniques such as linear programming, probability, queuing theory, correlation and regression analysis in solving the above problems. Examples from recent cases in the industry will be used in the course. Prerequisite: Understanding concepts of statistics equivalent to E-RAU course MA 211 or MA 222.

MS 602 — Principles of Air Transportation **3 Credits**
An in-depth study of the air transportation industry and its role in the total multi-modal transportation system, both foreign and domestic.

Evolution of the system and its modes in the twentieth century will be reviewed in terms of technological, economic, social, and political aspects. Long- and short-term effects of the deregulation movement and the energy crisis will be examined and analyzed. Passenger and freight transportation, and common carrier and private carriage in each mode will be studied with respect to the changing system as a whole and air transportation in particular. Prerequisites: Understanding concepts of management and economics equivalent to E-RAU courses MS 200 or MS 205, EC 110 and EC 210.

MS 603 — Analysis of Data Base Management Systems 3 Credits
This course will provide an in-depth study of software systems designed for managing the storage, access, updating and maintenance (in an up-to-date condition) of a Data Base (DBMS). A Data Base is the collection of all data used and produced by a computer system and is one of the more important concepts in modern computer systems development. Emphasis will be placed on identifying and understanding the capabilities and cost-effectiveness of the Data Base Management Systems available today as well as the advantages and disadvantages of using DBMS in modern business EDP applications. Basic concepts of data structures will be reviewed. Prerequisites: Understanding computer concepts, management information systems and data structures equivalent to E-RAU courses CS 109, MS 319 and CS 410.

MS 604 — Computer Systems Modeling 3 Credits
A study of the concepts and procedures involved in developing and applying mathematical models of business operations as components of decision support systems. The primary focus will be on methodology and the use of models as the required technique of computer simulation so as to produce useful information. Included in the course will be information and examples of how to approach modeling, especially linear programming, emphasizing varieties of models and classroom experience to improve model formulation and application. Examples of information covered will be networks, mathematical programming, forecasting, the Markov Process, and Material Requirements Planning (MRP). An emphasis will be placed on computer output analysis rather than pure manual analysis. Prerequisites: Understanding concepts of statistics, accounting and decision mathematics equivalent to E-RAU courses MA 211 or MA 222, MS 110, MS 112 and MA 320.

MS 605 — Data Communications and Network Systems 3 Credits
Techniques and applications in the use of data communications and networks of computers and computer terminals will be covered. The basic inherent differences between batch and on-line processing will be reviewed. A study of the hardware and software necessary to the structure of a network and the implementation and control of the

communication of data will be made. The methods and relative costs of the different means of telecommunications will be examined in detail. An emphasis will be placed on equipping the student to make major decisions concerning the acquisition and/or implementation of such systems. Prerequisite: Understanding computer concepts equivalent to E-RAU course CS 109.

MS 606 — Computer Based Gaming for Data Analysis 3 Credits
A study of management games in an imaginary business environment where participants practice the art and science of planning and decision-making at the top management level. Management games permit the student to make a relatively long series of decisions in a short time, with prompt evaluation providing rapid feedback. These games constitute dynamic business cases, whose outcome is determined by the internal functioning and external interactions of several competing firms. Even though managerial games are based on a computerized economic model, the game situation emphasizes realistic uncertainty. This course will integrate a number of previous undergraduate and graduate courses into a single coordinated situation which illustrates relationships, and thus enhances the students' decision-making and problem solving ability. Prerequisites: Understanding concepts of management, economics and computers equivalent to E-RAU courses MS 200 or MS 205, EC 110, EC 210 and CS 109.

MS 608 — Advanced Topics in Computers 3 Credits
Research projects designed to analyze and evaluate aviation computer systems such as air traffic control computing systems, airborn computing systems, maintenance management systems, aviation operations computer systems, financial management systems, simulation systems, etc. Prerequisites: Understanding computer concepts and analysis of data base management systems equivalent to E-RAU courses CS 109 and MS 603.

MS 609 — Airline Operations and Management (Formerly MS 605) 3 Credits
An integration of the components and characteristics of the airline industry with the functions of management in airline operations. The various categories of air carriers and their particular role in serving the air transportation needs of the country will be studied. The characteristics of the airline industry as distinct from other industries will be examined. Elements of airline organization including organizational planning, line and staff responsibilities and factors influencing decisions on organizational alternatives will be explored. A complete review and analysis will be made of the departmental structure of an airline including the purpose, scope and functions of all departments. Prerequisite: Understanding concepts of management equivalent to E-RAU course MS 200 or MS 205.

MS 610 — Advanced Organization Theory **3 Credits**
A survey course designed to acquaint the student with a broad spectrum of organization theory and management thought. While the content of the course includes concepts and theories of organization/-management, the focus of the course is on their usefulness to the manager. The course will include traditional and evolving organization theory, philosophies, and viewpoints; the interactions of authority, delegation, reporting chain, span of management, communication needs, and feedback design; the impact of psychology, sociology and other areas of behavioral studies on organization (the people and the structure). This course will provide an opportunity for engaging in comparative organizational analysis and case studies which consider the organization as an entity and as a sub-system of society. Prerequisite: Understanding concepts of management equivalent to E-RAU course MS 200 or MS 205.

MS 611 — Quantitative Methods in Business **3 Credits**
A comprehensive study of the concepts and principles of quantitative methods used in the field of management. The course is designed for students who have no previous background in quantitative methods beyond basic statistics and who intend careers as administrators, consultants, executives or managers in the aviation industry. The course objectives are: to introduce the important ideas in quantitative methods, to give the student enough understanding and confidence to appreciate the strengths and inherent limitations of the subject and to demonstrate the cohesiveness of the methodology. Prerequisites: Understanding concepts of statistics and accounting equivalent to E-RAU courses MA 211 or MA 222, MS 110 and 112.

MS 612 — Management Information Systems **3 Credits**
A study of management information systems and their role in complex, dynamic, and technology-oriented organizations. Part of the course focuses on the development methodology for information systems including systems analysis, design, and implementation. This includes the more specific aspects of: information requirements, technology, structures, outputs, and data base development and design considerations. The other part of the course provides an introduction to management systems concepts drawing from the field of general systems theory, cybernetics, and systems dynamics. The intent is to show that any organization can be reviewed as a system, having inputs, outputs, and processes, which operates in an environment that affects the organization. Prerequisites: None.

MS 613 — Personnel Management and Industrial Relations **3 Credits**
This course is designed to assist the student in the fundamentals of management by providing a broad and variable knowledge of theory, structures and techniques in the utilization and application of human

resources in any organization; systems and processes as applied to personnel management; dynamics of managing in a changing environment including social, economic and technological developments; job motivation and satisfaction as a relevant corollary to the productivity factor; interrelations of identified, specific personnel processes to maximize human effort and contributions towards the attainment of organizational goals; conflict between non-unionized decision-making processes within an organization. Prerequisite: Understanding concepts of management equivalent to E-RAU course MS 200 or MS 205.

MS 614 — Marketing Analysis **3 Credits**
Examines the role of the marketing manager and the role of marketing in the firm and in society. The development of a marketing mix: product, price, place and promotion for a specific target market is central, with particular emphasis on the relevance of these elements to the other functional areas of the firm. Prerequisites: Understanding concepts of economics equivalent to E-RAU courses EC 110 and EC 210.

MS 615 — Current Problems in Aviation **3 Credits**
An analysis of the major problem areas in aviation, covering all types of civil aviation with particular attention to the economic problems of airlines, the congestion problems at airports and in the airways, and the problems of the non-airline (general aviation) operator. Prerequisites: None.

MS 618 — Corporate Finance **3 Credits**
A critical study of current concepts in finance with major emphasis on the administrative and managerial implications. General corporate finance; financial policy, planning and management; financial accounts and statements. Prerequisites: Understanding concepts of management and accounting equivalent to E-RAU courses MS 200 or MS 205, MS 110 and MS 112.

MS 620 — Managerial Psychology **3 Credits**
An examination of the causes and implications of human behavior in the organizational environment. This course will provide an opportunity for the student to become familiar with the methods, subject matter and literature in the field of managerial psychology in order to consider the human problems facing management: propose solutions and evaluate the comparative theories explaining and describing human behavior, utilizing behavioral studies in perception, personality, learning theory, behavior modification, motivation and work, systems psychology and influencing behavior. Prerequisites: None.

MS 625 — Airline Marketing Management **3 Credits**
An in-depth study of the functions and basic concepts in marketing air transportation services. Passenger and cargo markets including

determinants of travel demand, growth factors, seasonality, cargo traffic categories and characteristics will be analyzed. The product and service elements, including the role of advertising and travel agents; airline marketing organizational structure; pricing and cost environment; and fundamental principles of schedule planning will be examined. Prerequisites: Understanding concepts of economics equivalent to E-RAU courses EC 110 and EC 210.

MS 632 — Aviation Labor Relations **3 Credits**

This course is designed to provide the student with an introduction to labor laws, i.e. the Wagner Act, as amended by the Taft-Hartley Law and as applicable to aerospace and aviation manufacturing industries; the Railway Labor Act, as applicable to the Air Transport Industry and with additional emphasis on other broad federal statutes which impact on management-labor relations and practices; collective bargaining process and practices; cost effectiveness and contract administration. Prerequisite: Understanding concepts of management equivalent to E-RAU course MS 200 or MS 205.

MS 635 — Business Policy Analysis **3 Credits**

Problems, methods, and analytical framework for building and maintaining consistent and effective policy in the business enterprise; environmental constraints and their effect on corporate leadership in planning and policy formulation. This is a capstone course and should, wherever possible, be preceded by MS 610, Advanced Organization Theory; MS 611, Quantitative Methods in Business; MS 612, Management Information Systems; MS 614, Marketing Management; MS 618, Corporate Finance. Prerequisites: Understanding concepts of management and accounting equivalent to E-RAU courses MS 200 or MS 205, MS 110 and MS 112.

MS 638 — Managerial Economics **3 Credits**

This course is designed to be a study of the underlying principles, laws, structure and theories of economics as applied to managerial decision-making in business. The interrelationships between uncertainty, profitability, and business decisions using mathematical economic concepts are covered. The control and applicability of such basic economic concepts as managerial analysis, opportunity cost, market structure, demand theory, and public-sector pricing are explored in the course. Prerequisites: Understanding concepts of management and economics equivalent to E-RAU courses MS 200 or MS 205, EC 110 and EC 210.

MS 645 — Airport Management **3 Credits**

A study of the major functions of Airport Management and the concepts underlying airport planning, development and operations. The management of on-airport operations by major airport tenants such as airlines and fixed-base operators and their relationship with the

airport-proprietors' management are encompassed. The course is designed to acquaint the student with the current problems confronting airport management, including such areas as applicable regulations, financing, revenues, costs, fees and user charges, safety and security. The socioeconomic effect of airports on the communities they serve will be explored. Prerequisite: Understanding concepts of management equivalent to E-RAU course MS 200 or MS 205.

MS 655 — Aviation Law and Insurance **3 Credits**

Examination of the governmental regulatory functions affecting statutory and administrative law pertaining to aviation. Students will study the underlying legal principles pertaining to the conduct of an aviation enterprise and the impact of law on business policies and operations. This portion of the course will be national and international in scope. The second part of the course will deal with the legal aspects of business contracts, negotiable instruments and the commercial code as they pertain to aviation. Thirdly, the student will be introduced to the common law and the principles of insurance and risk with respect to the aviation industry. Prerequisites: None.

MS 695 — Special Project **Variable**

Students may, with the approval of the Graduate Program Director, elect to perform special directed analysis and/or independent studies. The student will develop a detailed proposal of his planned study/research and present it to the Graduate Program Director/Associate Dean for approval not less than three weeks prior to registration/enrollment in the course. Prerequisite: Approval of the Program Director/Associate Dean.

Dr. Milton Horwitz, Associate Professor, Aeronautical Science, conducting a class in Aviation Labor Relations.

University Regulations

Introduction

Students enrolled in Embry-Riddle Aeronautical University graduate programs pursue academic and professional goals that will enable them to assume leadership positions in various segments of the aviation industry. Because of Embry-Riddle's tradition of excellence in aviation education, its standards and expectations of the student are high. Term papers and/or term projects are usually required in all but the advanced flight courses, and it is incumbent on graduate students to do outside reading and keep abreast of the latest developments which relate directly to their courses. Students are expected to be professional in their approach to course preparation.

Attendance

Students are expected to attend all scheduled classes. Attendance will be considered by instructors when assigning final course grades.

It is recognized that on occasion it may be necessary for the student to be absent from class for valid reasons. On such occasions, all matters related to the student's absence, including the making up of work, are to be arranged between the student and the professor. Where absences are anticipated, it is recommended the student seek to arrange for taping of the session to be missed.

Conduct

Students are expected to observe generally accepted standards of conduct and to assume personal responsibilities appropriate to potential business and professional leaders. Plagiarism is an act of academic dishonesty. Any suspected acts of academic dishonesty will be presented to a specially appointed Graduate Student Conduct Committee, for appropriate recommendations. Final action may include a formal warning, failure in the test/paper/project involved, failure in the course, disciplinary probation, suspension from the University for a specified period of time, permanent dismissal from the University or other educational sanctions. The University reserves the right to dismiss any student whose conduct is deemed to be prejudicial or injurious to the University, the faculty, or other students.

Non-Continuous Enrollment

Normally a student graduates under the provisions of the catalog in effect at the time of his first enrollment. A student may choose to graduate under the provisions of a subsequent catalog. If he does so, he must meet all the provisions of the subsequent catalog.

A student who returns to one of the graduate programs after an absence of more than two years will be required to meet the degree

provisions of the catalog current upon his return, along with such other re-entry provisions as may be in effect.

A student who does not wish to register for a particular term but who intends to continue the program at some later date, should discuss his plans with his Center Director or the Associate Dean of Graduate Studies to facilitate his subsequent re-entry. Failure to comply with this request may complicate the student's re-entry in the term of his choice.

Academic Regulations

Length of Term, Classes and Hours

The academic year at the different graduate program locations may comprise three, four or five terms. Length of each term varies, depending on location. At the Daytona Beach campus there are three 15-week trimesters per year and the academic calendar coincides with that used for undergraduate programs (see page 4).

In Miami, there are four 10-week terms per year, commencing in October, January, March and June.

Contact the appropriate Center Director for program calendars at locations other than Daytona Beach.

Three credit hour courses, regardless of location, will provide for the equivalent of 45 hours of instruction as a minimum. Classes are normally scheduled during the evening hours and on weekends to accommodate the working student.

Grading and Grade Points

The following four-point scale is used to document student performance:

Grade	Achievement Rating	Grade Points
A	Excellent	4
B	Satisfactory	3
C	Passing	2
F	Failure	0
I	Incomplete Work	0
W	Withdrawal without Penalty	0
AU	Audit	0

Grade reports are mailed to students as soon as possible after course grades are submitted by instructors. Embry-Riddle is prohibited from releasing grade information to anyone other than the student without the express written instruction of the student.

Requests must be made each trimester/term; blanket authorizations are prohibited by law.

Incomplete

The incomplete grade "I" may be assigned by an instructor when a student is passing, but unable to complete his course work by the end of a term/trimester because of unusual circumstances beyond the student's control. For Daytona Beach campus students, incomplete work resulting in an "I" grade which is not completed by the end of the *first* term subsequent to the term in which it was assigned, will result in a grade of "F". For students at other locations, incomplete work resulting in an "I" grade which is not completed by the end of the *second* term subsequent to the term in which it was assigned will result in a grade of "F". Students who, for reasons beyond their control, cannot make up incomplete work in the appropriate time frame specified above, must submit a written petition to the appropriate Center Director or Associate Dean prior to expiration of that time, citing circumstances causing inability to complete assigned course work. The Dean may, based on this evidence, award a grade of "W" in the course.

Audit

The entry of "Audit" on a student's record indicates he has registered for and attended class but did not take any exams and, therefore, he receives no credit for the course.

A student may change his registration from audit to credit only during the "Add" period at the beginning of the term. A change of registration from credit to audit may be made only during the authorized withdrawal period. When a student auditing a course fails to maintain satisfactory attendance, as determined by the instructor, a grade of "W" will be assigned.

Withdrawal From a Course

At times a student may decide to withdraw from one or more courses in which he is enrolled. Since the length of the academic term varies at International Campus locations, the authorized withdrawal period also varies. As a general rule, however, withdrawal is not authorized after the midpoint of a term.

To officially withdraw from a course, students must complete the proper withdrawal forms. When a change of registration to withdrawal is properly filed, the student is assigned a grade of "W" for the course. If a student discontinues class attendance and fails to complete the withdrawal process within the allowable time, a grade of "F" will be assigned for each course in which the student was enrolled and no

tuition refund will be authorized.

Withdrawal From the University

To officially withdraw from the University, students must complete the proper withdrawal forms and submit them to the International Campus Records Office. Final dates for withdrawal are specified in the schedule of classes for each location. All accounts must be paid in full at the time of withdrawal. In cases of hardship, students may submit a written petition to the Dean of the Graduate College after the final withdrawal date, citing unusual circumstances and requesting a grade of "W" be assigned.

Grade Point Average

The grade point average (GPA) is determined by dividing the number of grade points earned at Embry-Riddle by the total number of hours attempted. When a "W", "I", or "AU" grade is recorded for a course, the hour value does not count as hours attempted. A grade point average is computed for each student at the end of each trimester or term. In addition to the trimester or term GPA, a cumulative GPA is computed for each student for all graduate work completed with the University.

The University reserves the right to withdraw the enrollment privilege of a student whose cumulative GPA in the program falls below 2.50. A student may repeat any University course as often as necessary or desired. In all cases, the grade for each attempt will appear on the student's academic record.

A repeated course shall be considered an additional course. In calculating the grade point average, all attempts at the course will be included for computing honors, but only the most recent grade for a repeated course will be used in computing cumulative grade point average for graduation.

The student must identify each course he is repeating at the time of registration in order that the repeat may be properly recorded on his permanent record.

Graduation Honors

The Master of Business Administration in Aviation, Master of Aviation Management and/or Master of Aeronautical Science degrees will be granted "With Distinction" to students completing their program with a cumulative GPA of 3.75 or higher for all graduate courses completed with Embry-Riddle.

Course Load

The maximum academic load for graduate students is nine credit hours for a 9- or 10-week term, 12 credit hours for a 15-week term and six credit hours for any term less than 9 weeks. Students working in excess of 25 hours per week are limited to a maximum of six credit hours per 9-week or greater length term and three credit hours for any term less than 9 weeks in length. The Center/Area Director or Associate Dean may require a student to register for fewer hours when this is deemed advisable in view of the student's academic standing.

Exceptions to the maximum limits may be authorized by the Center/Area Director or Associate Dean only when the student has demonstrated exceptional academic performance in graduate work previously with the University.

Degree Time Limit

A master's degree program must be completed within seven years of the time a student initially enrolls in the program.

Resident Credit

A minimum of 24 hours of graduate work including the last nine credit hours must be completed with Embry-Riddle for awarding the degree.

Transfer Credit and Advanced Standing

A maximum of 12 credit hours may be transferred from graduate programs at other regionally accredited colleges and universities toward the Master of Business Administration in Aviation degree, the Master of Aviation Management, or the Master of Aeronautical Science degree. This credit will be accepted only on the basis of an "official" transcript received directly from the institution or institutions with which the graduate work was completed. In order to be accepted toward the student's degree program, graduate courses completed at other institutions must have been completed with a grade of "B" or higher within the five-year period preceding the student's enrollment in an Embry-Riddle Master's level program. Additionally, only graduate work relevant to the individual's Embry-Riddle program will be accepted.

Subsequent to initial enrollment in a University Master's level program, all graduate course work required in the program must be completed with the University. As an exception, when an articulation agreement between Embry-Riddle and another institution exists or if prior written approval is obtained, course work with another institution may be applied toward the student's degree.

A course accepted in transfer for a required course must be equivalent to one of the program core courses. A course accepted in transfer to satisfy elective requirements of the degree must be either in the management or aeronautical science area and be approved by the Dean of the Graduate College. In such cases the transfer course must be degree related; however, it need not be equivalent to a specific Embry-Riddle elective course.

Advanced standing for non-collegiate experience is normally limited to credit granted on the basis of specified FAA certification and/or satisfactory completion of senior U.S. military service schools. Requests for credit on the basis of other life experience will be denied in all but exceptional cases.

When advanced standing is awarded, the credit will be granted for the courses and/or credit hours involved and the credit thus granted will be applicable toward the student's degree requirements when appropriate. "Official" documentation to support the award of advanced standing must be provided by the applicant.

From two to eight credit hours of advanced standing may be granted for possession of one or more of the Airline Transport Pilot and Flight Engineer Certificates, Licenses and type ratings listed below. Any credit granted will count toward the maximum of 12 transfer credit hours. If Flight Engineer and Airline Transport Pilot certificates and ratings have been used to satisfy specific undergraduate degree requirements, they may not also be used for advanced standing in the graduate program.

- Flight Engineer Certificate ..... 2 Credit Hours
- Flight Engineer License ..... 1 Credit Hour
  Reciprocating Powered Aircraft
- Flight Engineer License ..... 1 Credit Hour
  Turbine Powered Aircraft
- Airline Transport Pilot Certificate ..... 2 Credit Hours
- Type rating—Reciprocating Powered Aircraft .... 1 Credit Hour
- Type rating—Turbine Powered Aircraft ..... 1 Credit Hour

Students who have completed senior U.S. service schools recommended for award of graduate credit by the American Council on Education may be awarded advanced standing in accordance with the recommendations published in the American Council on Education "Guide to the Evaluation of Educational Experiences in the Armed Services" in accordance with the limitations and rules on applicability stated above.

The total hours of transfer credit and/or advanced standing accepted for a student will not exceed 12 credit hours.

Schedule of Classes

A schedule of classes is published at each graduate program location based on the needs of the students enrolled in the program at that location. All core courses are offered for the degree or degrees offered at each location; however, elective course offerings will depend upon the interests and needs of enrolled students and faculty availability.

The University reserves the right to make adjustments to the published schedule, to include cancellation of any class, when deemed necessary and appropriate. When a class is cancelled, affected students will be informed promptly in order that they may enroll in another course. Should circumstances preclude registration in another course, tuition for the cancelled course will be refunded in full.

Application for Degree

The application for any graduate degree must be sumitted to the appropriate Center Director or Associate Dean no later than the registration period of the term in which the student plans to complete degree requirements. A student may graduate at the end of any term.

Graduation Requirements

In order to graduate with the Master of Business Administration in Aviation, Master of Aviation Management, or the Master of Aeronautical Science degree, a student must:

- Satisfy foundation knowledge requirements.
- Successfully complete all required courses.
- Complete a minimum of 36 hours of graduate work acceptable toward the degree. Of these, a minimum of 24 hours of course work, including the last nine hours, must be completed with Embry-Riddle.
- Attain a cumulative grade point average of at least 3.00 for all Embry-Riddle graduate work.
- Satisfy all financial obligations to the University.
- Be recommended by the faculty, appropriate Center Director and the Dean of the Graduate College.

Dual Degree

The student may pursue two degrees — a Master of Business Administration in Aviation and a Master of Aeronautical Science degree OR a Master of Aviation Management and a Master of Aeronautical Science degree. A minimum of 12 additional hours, thus a minimum total of 48 hours of applicable graduate work, must be completed to be awarded two degrees. At least 18 hours must be in

Management Science courses and 21 hours in Aeronautical Science courses. Additionally, core course requirements of both programs must be satisfied. The student will be awarded two diplomas upon completion of the requirements for each degree and submission of an application for graduation. Students pursuing two degrees are limited to the maximum of 12 total transfer credit hours.

Student Rights and Privacy

Rights and privacy of students is the subject of Public Law 93-380 which became effective November 19, 1974. The law requires a student to sign individual release forms for each company, school, etc., to whom he wants information released. Any student desiring more information should contact the Center/Area Director or Associate Dean.

Transcripts

At the time of graduation, one complete transcript of record is furnished to the student without charge. For any additional transcript, a $2 fee is charged and the application for the transcript of record must be made by the student to the International Campus Student Records Office. Transcripts, letters of recommendation or certifications of attendance will not be released for students who have failed to meet their financial obligations to the University.

Standards of Performance

Following due process procedures, the University reserves the right to dismiss a student at any time and without further reason than regarding the student's conduct, academic standing or other performance as undesirable. Undesirable conduct is defined as conduct not within the best interests of the University as construed by the Student Conduct Committee, and includes, but is not limited to, academic dishonesty, obstruction or disruption of University activities, theft or property damage, physical abuse of persons, or possession of dangerous and narcotic drugs. Since a transcript or diploma is defined as meeting all University requirements, including behavioral and academic, the University reserves the right to withhold a transcript or diploma until the student's conduct has been evaluated as being acceptable.

Once admitted to graduate study, a student is expected to make reasonable and timely progress in terms of grades and courses toward the degree. Each student's progress will be reviewed at the end of each term of enrollment.

Academic Probation and Dismissal

Academic probation is imposed when the term and cumulative GPA of the student falls below 3.00.

After being placed on probation, a student must raise the cumulative GPA to at least 3.00 within the next 12 graduate credit hours completed following placement on probation. If the student fails to do so, he is subject to dismissal. A full-time student on probation may be required to limit enrollment to six credit hours; a part-time student on probation may be limited to three credit hours.

Students who have not attained candidacy for degree status by the time they have completed 18 Embry-Riddle graduate credit hours, as described on Page 9 of the Admissions chapter of this catalog, will be placed on academic probation. Students who do not meet degree candidacy requirements within one trimester/term of being placed on probation are subject to dismissal from the University.

Any student who has a cumulative GPA of less than 2.50 may be academically dismissed from the University.

VA STUDENTS ON PROBATION

Students receiving VA Educational Benefits while attending the University and who are placed on academic probation must raise their cumulative GPA to at least 3.00 in the next 12 graduate credit hours following placement on probation; but in no case may probationary status extend more than two trimesters/terms. Failure to remove probationary status within two trimesters/terms will result in interruption of VA benefits for unsatisfactory progress.

Mr. Robert J. Whempner, Director of Professional Programs and Ms. Deborah Wild, Professional Programs Specialist.

Student Services and Academic Support

Student Services and Academic Support

INTRODUCTION

Embry-Riddle Aeronautical University takes the position that its graduate students are mature adults whose individual fulfillment is largely derived from their program of study, their profession, and participation in and contributions to their community's activities. Many University sponsored services described in this section, such as recreational facilities, campus ministry and health services, are available only at the Daytona Beach Campus. At other locations similar services are usually available through the student's employer or his community. Students should contact the individual campus or Center at which they plan to enroll for specific information pertaining to services available.

LIBRARY FACILITIES

The Learning Resources Center on the Daytona Beach Campus provides the educational materials necessary to support the curriculum and to meet the needs of the faculty and student body. The aviation-oriented collection contains books, audio-visual programs, films and periodicals related to all aspects of University learning and extra-curricular activity.

Specialized indexes are complemented by computer searches to provide access to the comprehensive aviation references necessary in graduate research. The service-oriented staff of the Media Center offers assistance in locating materials on campus as well as at other institutions.

In addition to the current circulating materials, the University takes pride in its unique Research Collection. Over 10,000 volumes of historical aviation and engineering references document the development of aeronautics beginning with the early 1900s.

Library facilities at other locations will vary. The International Campus supplements library support at all locations through its system of instructional support material collection, preparation, cataloging and distribution.

COMPUTER CENTER

The Daytona Beach computing facilities consist of two HP-3000 computers and a PRIME computer, all with multi-programming and timesharing capabilities. One HP-3000 computer is dedicated to administrative and financial accounting, the other HP-3000 and the PRIME computer are used exclusively for educational purposes. Students have access to this computer through terminals available in the student terminal room and other locations on the Daytona Beach campus.

The educational computers support most commonly used computer languages including, Simulation Language (GASP), Statistical

Package (SPSS) and graphics capabilities. In addition, the university possesses microprocessor-based computers for laboratory work and special purpose applications. TRS-80 microprocessors are being installed for academic support at many other International Campus locations.

The Computer Learning Center design used at network locations where computer oriented undergraduate degree programs are offered includes a basic cluster of four TRS-80 Model III computers with sufficient capability to allow student activity required in successful completion of degrees at both the associate and bachelor level as well as support of graduate students enrolled in the computer related advanced courses of the E-RAU master's degrees.

AVIATION RESEARCH CENTER

Students, both graduate and undergraduate at the Daytona Beach Campus, have an opportunity to participate in various projects at the Aviation Research Center. The Center is dedicated to research and development in the areas of training and simulation, human factors, and product evaluation. Several research assistantships are available each year to outstanding students who wish to become involved in research.

PROFESSIONAL PROGRAMS

Programs Offered and Attendance

The College of Graduate Studies administers the University's office of Professional Programs.

Professional programs are offered in the form of short courses, seminars, and workshops. The programs have been targeted toward the specialized areas in the aviation industry. Typical professional programs include Commuter Airline Management, Eastern Airlines Safety Seminar, Aviation Law and Insurance, Aviation Arbitration, Corporate Security Management, Corporate Aviation Management, Fixed Based Operations Management, Labor Management, Human Factors, Professional Pilot Institute, and Aircraft Crash Specialist School.

In 1981 a new graduate course was introduced for Daytona Beach graduate students using four Professional Program seminars as the educational vehicle. This course provided the student a personal contact with top leaders in the aviation industry on state-of-the-art events. As future Professional Program seminars pertinent to the graduate curriculum are scheduled, selected students will be afforded the opportunity to attend.

Tapes/Instructional Support

Professional Programs contribute to the International Campus instructional support system at all graduate and undergraduate locations in the International Campus network. Each professional program

features a cadre of aviation experts as speakers, moderators, and contributors. Program presentations are audio-taped and integrated into instructional support packages. This provides up-to-date state-of-the-art information, cross indexed to pertinent graduate courses, for students, faculty, administrators, and staff.

SERVICES, FACILITIES FOR HANDICAPPED STUDENTS

The new student is acquainted with facilities and services for the handicapped through a one-to-one contact with the staff of the Student Affairs Office. Early registration for handicapped students is arranged through the College of Graduate Studies.

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

An academic counselor is available to discuss anything which affects the handicapped student's academic progress. The academic counselor is involved on an on-going basis with the student's academic progress and course of study.

HOUSING

On-campus housing is available to graduate students at Daytona Beach on a limited basis. Approximately 75% of all undergraduate and graduate students live off-campus. Contact the College of Graduate Studies for further information on campus housing.

There are many apartments and efficiency units within 10 minutes of the Daytona Beach campus. In addition, there are homes for rent and several mobile home parks located nearby. The University Department of Communities Services in Daytona Beach can assist students in finding suitable off-campus accommodations.

STUDENT ASSOCIATIONS

The Graduate Students Association for Daytona Beach students was formed in the fall of 1978. Meetings are held periodically to discuss matters of common interest. Elected officers of the Association serve as spokesmen for the graduate student body and maintain liaison with the University administration on all facets of the graduate program. Social events are held periodically throughout the year.

Student organizations of interest to graduate students at the Daytona Beach campus include the Bowling League, Scuba Club, Sport Parachute Club, American Institute of Aeronautics and Astronautics, Management Club and Veterans Association.

OTHER STUDENT ACTIVITIES AND SERVICES

The services listed below are available on the Daytona Beach Campus. At other locations, comparable services are usually provided by the military services or in the local community.

Sports

Intramural competition available at the Daytona Beach Campus includes basketball, bowling, flag football, softball, swimming, volleyball, tennis and weightlifting.

The Olympic size swimming pool at the Daytona Beach Campus is complete with race lanes and equipped with a variety of low and high diving platforms and springboards for recreational swimming as well as diving and swim competitions.

Campus Ministry

The Office of Campus Ministry is an association of clergymen active on the Daytona Beach campus. Representing different denominations, they offer a variety of ministries to the university community, including counseling, worship service and Bible study.

Health Service

On the Daytona Beach campus, the university maintains a Health Service staffed by qualified medical personnel. Local hospitals are in close proximity to campus. Referral service is conducted by the medical personnel at the Health Service.

Mail Service

Upon arrival at the Daytona Beach campus, students are encouraged to obtain a mail room box which may serve for delivery of personal mail and official University notices. The address will be as follows:

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

International Student Affairs

The Department of International Student Affairs at the Daytona Beach Campus is organized to meet the special needs of international students. Programs are designed to help students achieve educational goals and to experience the many facets of life in the United States. The staff acts as counselors, friends and advocates of international students, as well as a source of information and liaison for immigration related matters.

All new Daytona Beach International students must contact the Department of International Student Affairs upon their arrival on campus. It is located in Residence Hall #2, Room 179.

Veterans Association

The Embry-Riddle Veterans Association membership consists of veterans and active duty military personnel enrolled at Embry-Riddle. Its main functions are to provide communication between its

members and the administration and to assist the veteran in his activities within the University and the community. The organization also holds numerous social functions throughout the trimester. For information, contact the Veterans Association Office in Daytona Beach.

ALUMNI ASSOCIATION

The purpose of the Embry-Riddle Alumni Association is to promote, aid, encourage and develop the aims and objectives of Embry-Riddle Aeronautical University. 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 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 experiences, they can answer some of the many questions regarding expenses, housing, social activities and other aspects of the University.

Many alumni volunteers 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 of the University.

ALUMNI COUNSELORS

Graduates of Embry-Riddle Aeronautical University's Masters' degree programs are in an excellent position to evaluate the objectives, facilities and effectiveness of the Embry-Riddle curriculum as preparation for careers in aviation and related industries. On the basis of their personal experiences, they can answer many questions regarding expenses, housing, social activities and other aspects of the program.

Many alumni voluntarily serve as counselors for prospective students. They welcome the opportunity to discuss the instruction offered and its usefulness in preparing for aviation careers. Names, addresses and titles of domestic and international alumni counselors are listed below.

Domestic Counselors

Frank H. Alley, Captain, Eastern Airlines, Inc., Flight Operations, AMF, Miami, FL 33148

Harold W. Beaver, Specialist Personnel Information, Eastern Airlines, Inc., Miami International Airport, Miami, FL 33148

Guillermo J. Bernardini, International Export Manager, Page Aero Facilities, 5700 NW 36th Street, Miami, FL 33148

Derek R. Bernett, Engineering Analyst, McDonnell Aircraft Co., Dept. 210 Building 1, Level 3, P.O. Box 516, St. Louis, MO 63166

William E. Bivens, Senior Propulsion Engineer, Pan American World Airways, AMF P.O. Box 592055, Miami, FL 33159

Robert F. Bobrowski, Captain, USAF

Carlos G. Bocock, Financial Operations Analyst, Federal Express, Box 727, Dept. O, Memphis, TN 38194

Steven R. Bray, Airport Supervisor, JFK & LaGuardia Airports, John F. Kennedy International Airport, Jamaica, NY 11430

Charles F. Bukoski, Work Controller, Eastern Airlines, Inc., Miami International Airport, Miami, FL 33148

Sandra Distretti, Chief, Air Traffic Control Operations, PSC Box 1821, Ellsworth AFB, North Dakota 57706

Timothy W. Donnally, Flight Attendant, US Air, 11D Sea Breeze Lane, Nahant, MA 01908

Thomas M. Edwards, Assistant Dean, International Campus, Embry-Riddle Aeronautical University, Star Route Box 540, Bunnell, FL 32010

John G. Ferrucci, Air Transportation Analyst, Flight Transportation Associates, 675 Massachusetts Ave., Cambridge, MA 02139

Gary Francis, Administrative Assistant/Engineering, McDonnel Aircraft Co., Dept. 205, Building 102, Level 2, Post K 220, St. Louis, MO 63166

Oliver E. Gagne, Jr. Operations Manager, Detroit City Airport, 11499 Connor Avenue, Detroit, MI 48213

Donald G. Gies, Jr., Air Transportation Analyst, Edward McNeal Associates, Wayne, PA 19087

David S. Gordon, Sales Representative, Burlington Northern Air Freight, 4195 East 6th Street, Orlando, FL 32812

Eric Von Gruber, Research Associate, Aviation Research Center, Embry-Riddle Aeronautical University, Regional Airport, Daytona Beach, FL 32014

Leo S. Haigley, Director, Reservations & Ticket Offices Support (USA), Pan American World Airways, AMF, P.O. Box 592055, Miami, FL 33159

Jane P. Jule, Admissions Coordinator, Central Admissions Dept., Embry-Riddle Aeronautical University, Star Route Box 540, Bunnell, FL 32010

Donald W. Kerr, First Officer, Eastern Airlines, Inc., Flight Operations, AMF, Miami, FL 33148

Robert L. Ladd, Foreman, Ground Equipment Maintenance, Eastern Airlines, Inc., Miami International Airport, Miami, FL 33148

Rick D. Larsen, Manager-Reliability & Planning, Midway Airlines, Midway Airport, Chicago, IL 60638

John Morgan, Captain Delta Airlines, Field Office Director, Airline Pilots Assoc., 1722 Ponce de Leon, Coral Gables, FL

Joseph E. Obi, Instructor, Aviation Management Division, Embry-Riddle Aeronautical University, Regional Airport, Daytona Beach, FL 32014

Lester A. Philips, Jr., Manager, Alumni Relations, Embry-Riddle Aeronautical University, Star Route Box 540, Bunnell, FL 32010

John E. Phipps, Assistant Director of Training/Single Engine, Flight Division, Embry-Riddle Aeronautical University, Regional Airport, Daytona Beach, FL 32014

William J. Potter, Program Analyst, Airport Compatibility, Douglas Aircraft Co., Internal Mail Code 41-72, 3855 Lakewood Blvd., Long Beach, CA 90846

Richard J. Queenan, Aviation Consultant, Aviation Consulting, Inc., 69 N. St. Andrews Drive, Ormond Beach, FL 32074

Thomas L. Roderick, Aircraft Mechanic, Eastern Airlines, Miami International Airport, Miami, FL 33148

Raymond Santa, Regional Manager, Marketing/Admissions, Embry-Riddle Aeronautical University, Prescott Campus, 2600 Willow Creek Road, Prescott, AZ 86301

Oludotun A. Shebanjo, Instructor, Flight Division, Embry-Riddle Aeronautical University, Regional Airport, Daytona Beach, FL 32014

Gerald Stanley, 999-47 S.W. 16th Avenue, Gainesville, FL 32601

Jonathan P. Svoboda, 2229 S. 162nd Circle, Omaha, Nebraska 68130

Donald L. Trowbridge, Program Chairman, Aviation Maintenance Technology, Embry-Riddle Aeronautical University, Regional Airport, Daytona Beach, FL 32014

Bill G. Vaughn, Manager of Training, Aerospatiale Helicopter Corp., 2701 Forum Drive, Grand Prairie, TX 75051

Thomas F. Walby, Captain, Eastern Airlines, Flight Operations, Miami International Airport, AMF, Miami, FL 33148

Michael E. Wiggins, Course Monitor/Multi-Engine, Flight Division, Embry-Riddle Aeronautical University, Regional Airport, Daytona Beach, FL 32014

James R. Wilhelm, Assistant Professor-Aeronautics, Embry-Riddle Aeronautical University, Prescott Campus, 2600 Willow Creek Road, Prescott, AZ 86301

International Counselors

Kingsley Clarke, Managing Director, Caribbean Air Cargo, Ltd., Grantley Adams International Airport, Christ Church, Babados, West Indies

Akabom MkPang Effiong, 19 Ibesikpo Street, Calabar, Cross River State, Nigeria

Hassan ElTaher, Marketing Analyst/Marketing Department, Pacific Western Airlines Ltd., Suite 700, 700 2nd Street, SW, Calgary, Alberta T2P 2W1, Canada

Kaku A. Kwaw, Director, Ghana Civil Aviation Department, P.O. Box 84, Accra, Ghana

Armando Quiroz, Chief of Fleet Planning, Aeromexico, S.A., Rio Lerme 256, 9o. Piso, Col. Cuauhtemoc, Mexico D.F.
Agus S. Santoro, Chief of Production and Fleet Planning, Government of Indonesia, Jakarta, Indonesia
Francisco E. Visconti, Pilot/Engineer, Venezuelan Air Force

Graduate Students Gregory Franklin, Terry Ryman and William Phyall.

Financial Information

Financial Information

INTRODUCTION

The University reserves the right to revise the fees, prices, schedules and terms of payment and other financial elements listed in this Catalog at any time without advance notice. It is anticipated that inflationary trends will cause annual adjustments to the schedule of tuition and fees listed below.

TUITION, DEPOSITS AND FEES

TUITION

Daytona Beach Campus ..... $125 per credit hour
Tuition at other Graduate Program locations varies.
Consult the appropriate Center for tuition information.

FEES (Non-Refundable)

Application Fee, Degree Student (one time) $25
Application Fee, Special Student (one time) 25
*Application Fee, International Student (one time) 50
*International Student Service Fee 50
(Daytona Beach — per trimester)
Late Registration Fee (Daytona Beach) 25
Late Tuition Payment Fee (Daytona Beach) 25
Lab Fee (Variable, dependent on designated course)
Graduation Fee (payable upon application) 25
Additional Transcript Fee 2

For information regarding advanced flight course lab fees, contact the Associate Dean of Graduate Studies, Star Route Box 540, Bunnell, FL 32010.

For information on tuition and fees in Miami and at all other locations, contact the Associate Dean of Graduate Studies — Miami, or the appropriate Center Director/Associate Dean.

*International student application and service fees are assessed to defray some of the additional costs associated with processing international student applications and providing counseling and assistance on immigration and other matters directly affecting international students.

PAYMENT PROCEDURES

Registration, when accepted by the University, constitutes a financial contract between the University and the student. Failure to make payments of any amount owed the University when it becomes due is considered sufficient cause to suspend the student and withhold grades, transcripts, diplomas and degrees until the debt has been satisfied.

Full payment or provision for payment of tuition and fees accepta-

ble to the University must be completed in accordance with the schedule published at each graduate program location.

REFUNDS

Only students who are in good standing at the time of withdrawal are entitled to a refund. Those students "not in good standing" include individuals under disciplinary suspension, dismissal, or withdrawal in lieu of disciplinary action.

At graduate locations other than Daytona Beach, a refund of fees is not permitted after the first day of class unless otherwise specified in a written agreement between the University and the E-RAU Center host authority. Refunds requested for withdrawal due to circumstances clearly beyond the student's control, such as illness, required military service, etc., should be submitted to the Center Director/Associate Dean for consideration.

At the Daytona Beach campus, only those students who officially withdraw from the University through the International Campus Records Office are eligible for a percentage refund of charges as set forth below. The effective date of the withdrawal will be the date recorded on the Change of Registration form. At locations other than Daytona Beach, the effective date of withdrawal will be governed by local rules and regulations.

Tuition is refundable according to the following withdrawal schedule:

Full Trimester or Summer Term

Period I:	First calendar week	100%
Period II:	Second calendar week	50%
Period III:	Third calendar week	0%

NOTE: Students who make advance payment of tuition and/or fees but withdraw prior to the first day of instruction will receive a refund of all tuition payments.

Any refund matters not mentioned above should be referred to the Refund Committee of the International Campus.

FINANCIAL AID

Embry-Riddle makes every effort, within the limitations of its available financial resources, to assure that no qualified student is denied the opportunity to obtain an education because of lack of funds. However, the primary responsibility for financing the education must be assumed by the student.

Financial Assistance for Daytona Beach graduate students is available in the form of loans, grants and part-time employment. Some of the assistance programs described below are available at other graduate program locations, however, students should contact the Center Director/Associate Dean at their particular location to determine the availability of financial assistance. All students must meet the University's academic requirements in order to continue to receive financial

aid. Funds for some programs are extremely limited; therefore, it is important that a student apply on a timely basis.

Guaranteed Student Loan

- Long term loan that must be repaid
- Borrow directly from a bank, savings and loan association or other participating lender
- Graduate students may borrow up to $5,000.00 each academic year with a maximum of $25,000.00 including all undergraduate loans
- Interest rate is 9% with repayment beginning 6 months after ceasing to be enrolled at least half-time at the University
- Minimum monthly payment is $50.00 up to a period of 10 years
- If adjusted gross income is over $30,000.00, loan may be reduced or denied depending on financial need
- Obtain an application from a participating lender and forward to the Financial Aid Office

National Direct Student Loan

- Long term, low interest (5%) loan that must be repaid beginning 6 months after ceasing to be enrolled at the University
- Minimum monthly payment is $30.00 with up to 10 years to repay
- Awarded by the Financial Aid Office
- Awards range up to $1,500.00 for each academic level, with a maximum of $12,000.00 including all undergraduate loans
- Apply by completing the Financial Aid Form (FAF) *and* E-RAU Financial Aid
- Data Sheet (FADS)
- Daytona Beach Campus only

Auxiliary Loans to Assist Students (ALAS)

- Loan that must be repaid
- Borrow directly from a bank, savings and loan association or other participating lender
- Interest rate may be either 12% or 14% depending on U.S. Treasury Bill rate
- Repayment being 60 days after loan is disbursed
- Graduate students may borrow up to $3,000.00 each academic year up to maximum of $15,000.00 (in addition to amounts borrowed under the GSL program)
- Obtain an application from a participating lender and forward to the Financial Aid Office

Florida Academic Scholars Fund

- Must have been a Florida resident for the preceding two years prior to graduation from high school or equivalent
- Graduate students must provide documentation certifying a

cumulative 3.5 undergraduate GPA *and* as having ranked in the upper 2% of an accredited public or private college or University graduation class
- New and renewal applications (FORM AS-1) can be obtained from the Financial Aid Office

College Work Study and Institutional Employment
- Part-time employment while attending the University
- Minimum wage unless position requires advanced skills or license
- Awarded by the Financial Aid Office
- To apply complete the Financial Aid form (FAF) and E-RAU Financial Aid Data Sheet (FADS)
- Daytona Beach Campus only

Veterans Benefits
- Embry-Riddle graduate programs have been approved for VA Educational benefits.
- Students planning to use VA benefits should contact the VA office at the Daytona Beach campus or the Graduate Center Director at other locations as soon as possible *prior to* their planned enrollment.

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Dr. Marie Haley

Dr. John E. Engel

Dr. Harold E. Green

Mr. R. Bruce Morrin

Mr. Howard S. Sellinger

Faculty and Administration

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The Graduate Council serves in an advisory capacity to the Dean of the Graduate College. It initiates or reviews policies dealing with new and continuing degree programs, curricula, faculty qualifications, research needs, library accommodations, academic standards, instructional methods, evaluation procedures and other matters of academic concern.

Council members are selected on the basis of their education, research, aviation or management backgrounds.

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Howard S. Sellinger
Associate Dean of Graduate Programs; Assistant Director, Miami Education Consortium; B.S., LeMoyne College; M.S., Niagara University

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Embry-Riddle is establishing a number of "Centers of Expertise" in various Aviation disciplines. One of the responsibilities of the Centers is to provide direction and guidance to the University's graduate level programs. The Centers are comprised of individuals who are nationally known and recognized for their expertise in various facets of aviation.

Directors of the "Centers of Expertise" also serve on the International Advisory Council which was established by the Board of Trus-

tees as a way of providing greater recognition to those who assist the University in its development.

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Barry Trotter, Manager, Flight Safety, Eastern Air Lines, Miami, FL

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Based on the philosophy that a balance between theoretical and practical instruction is the most beneficial, graduate faculty members and staff have been selected on the basis of a combination of their academic qualifications and their program administration. Executives who are acknowledged leaders in their respective fields also serve as adjunct faculty.

John S.M. Albert
B.S. Mechanical Engineering, Borough Polytechnic, (London); M.B.A., New York Institute of Technology.

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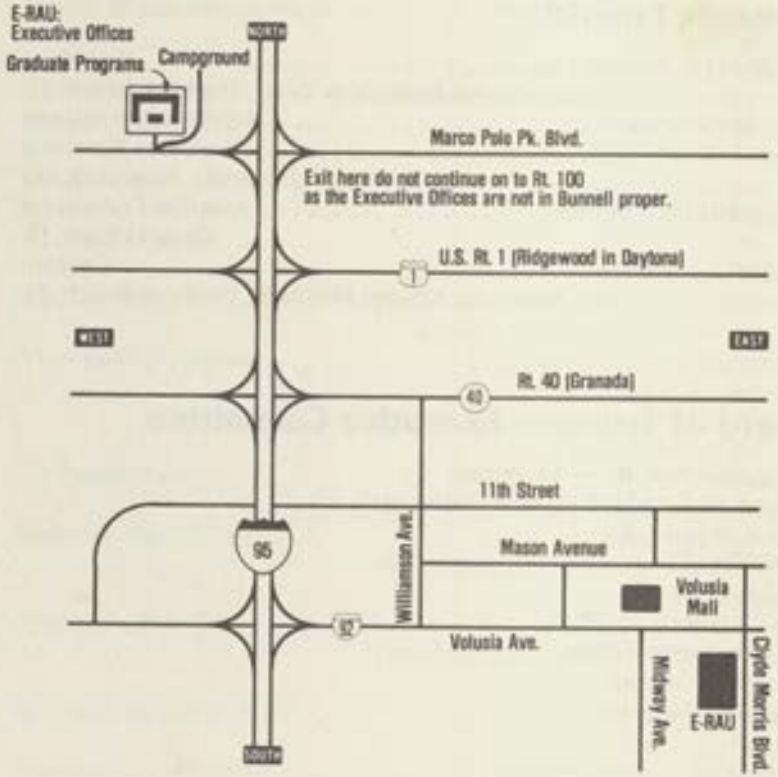
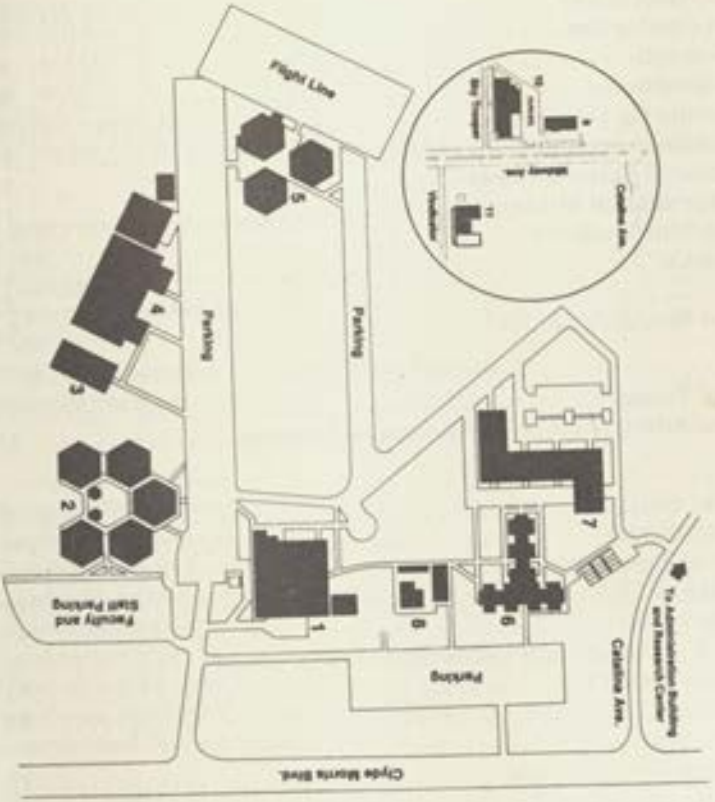

E-RAU:
Executive Offices
Graduate Programs
Campground
NORTH
Marco Polo Pk. Blvd.
Exit here do not continue on to Rt. 100
as the Executive Offices are not in Bunnell proper.
U.S. Rt. 1 (Ridgewood in Daytona)
1
WEST
EAST
Rt. 40 (Granada)
40
11th Street
95
Williamson Ave.
Mason Avenue
Volusia
Mall
92
Volusia Ave.
Midway Ave.
E-RAU
Clyde Morris Blvd.
SOUTH

Daytona Beach, Florida Campus

1. University Center
   - Avion
   - Barber Shop
   - Book Store
   - Career Center
   - Cashier Annex
   - Communications
   - Health Services
   - Mail Room
   - Security
   - S.G.A.
   - Student Activities
   - Student Affairs
2. Lindbergh Center
3. Engineering Science Laboratory
4. Samuel Goldman Maintenance Technology Center
5. Gil Robb Wilson Flight Center
6. Residence Hall #1
7. Residence Hall #2
   - Recreation Office
   - International Student Affairs
   - Housing Office
8. Tine W. Davis Swimming Pool
9. Aviation Research Center
10. Administration Building
    - Accounting
    - Admissions/Records
    - Bursar/Cashier
    - Dean of Students
    - Financial Aid
    - Insurance
    - Personnel
    - Purchasing
    - Provost
    - VA Office
11. Physical Plant/Planning Services



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