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Bulletin 1965

Embry-Riddle Aeronautical Institute

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BULLETIN 1965

FOUNDED 1926

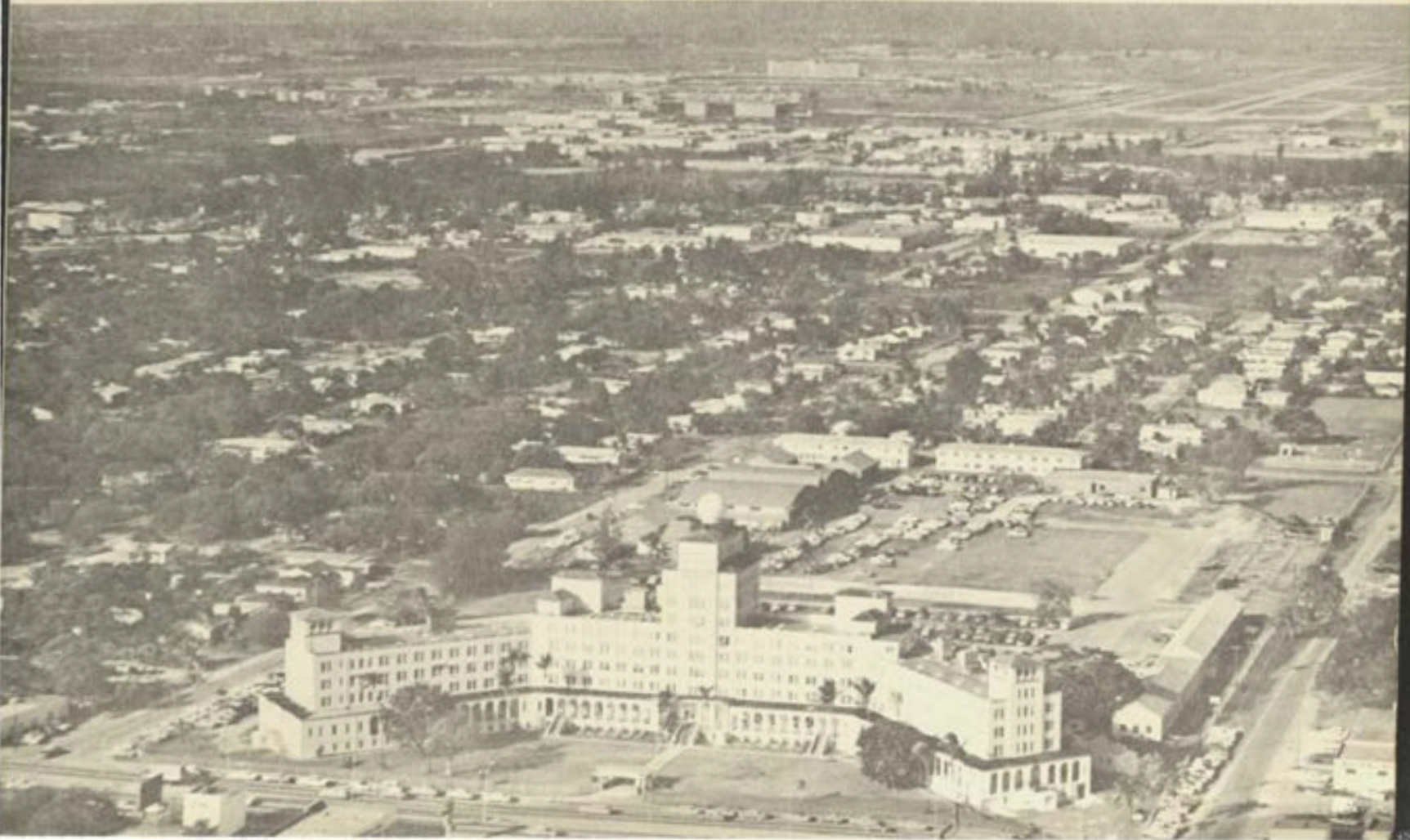
Embry Riddle

AERONAUTICAL INSTITUTE

A Non-Profit Institution of Higher Education

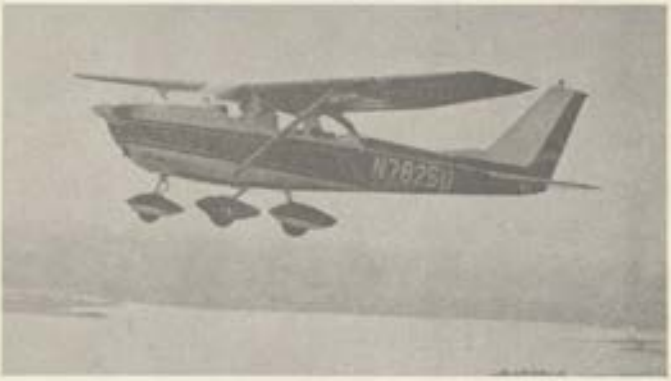
MIAMI, FLORIDA 33152

Embry-Riddle Aeronautical Institute in foreground . . . Miami International Airport in background



A Non-profit, private institution of Higher Education.

BULLETIN 1965



One of Embry-Riddle's modern fleet

1-65-74M

CONTENTS

EMBRY-RIDDLE AERONAUTICAL INSTITUTE

CALENDAR

1965

Registration & Placement	Classes Begin	Classes End	Location
WINTER TRIMESTER			
January 4 and 5	January 6	April 21	Miami, Florida
SPRING TRIMESTER			
May 17 and 18	May 19	September 1	Daytona Beach, Florida
FALL TRIMESTER			
Sept. 2 and 3	September 7	December 17	Daytona Beach, Florida

BOARD OF TRUSTEES

Isabel McKay, Chairman ..... President
Embry Riddle Company

Jack Holden Beckwith ..... Chief of Oral Surgery
Mercy Hospital

Charles R. Graham ..... President
Graham Development Corporation

M. R. Harrison, Jr. ..... President
M. R. Harrison Construction Corporation

Hobert B. McKay ..... Transit Executive
National City Management Company

John G. McKay, Jr. ..... Partner
Dixon, DeJarnette, Bradford, Williams, McKay & Kimbrell

Grover A. J. Noetzel ..... University of Miami

Harvey F. Pierce ..... Secretary-Treasurer
Maurice H. Connell & Associates, Inc.

M. Chapin Krech ..... Headmaster, Riviera Day School

Gary R. Cunningham ..... President, Cunningham Oil Co. of Daytona

L. W. Grabe ..... Pres., Ormond Beach Federal Savings & Loan Assn.

ADMINISTRATION

Jack R. Hunt, A.A., B.S., M.S. ..... President

Bradford T. Bowen, Jr., B.S. ... Administrative Assistant to President

Ethel V. Cornelius, B.S. ..... Secretary

Amelia C. Martin, Ph. L. ..... Chief Accountant

Harry S. Pickering ..... Director of Community Relations

Clarence W. Smith, B.S. ..... Director of Admissions and Registrar

Frank G. Forrest, B.S. ..... Dean of Engineering

Agee C. Tacker ..... Acting Director of Flight Division

Leonard P. Davidson ... Director of Airframe & Powerplant Division

GENERAL INFORMATION

History

Embry-Riddle originated as a flying school at Lunken Airport, Cincinnati, Ohio in 1926. Since then it participated in the field of aeronautical education both nationally and internationally, and became known as the Embry-Riddle International School of Aviation.

During the grave crisis, prior to World War II when the United States Army was in critical need of pilots and mechanics, Embry-Riddle was called upon to assist the Armed Forces in developing a program to successfully fulfill this need. As a result, the school established and operated four large Army flight schools in two cities, while a large Army mechanics training operation with a flow of over two thousand trainees was conducted on the school premises in Miami, Florida.

In September 1961 Embry-Riddle Aeronautical Institute, a non-profit coeducational institution replaced the International School of Aviation. Recently, Embry-Riddle Aeronautical Institute has broadened its educational programs to include certain courses in the field of engineering. At present Embry-Riddle offers curricula in aeronautical engineering, aeronautical engineering technology, aircraft maintenance engineering technology, airframe and powerplant mechanic training to include jet engines, flight engineers training, and pilot training complete with ground school and synthetic trainers.

The Board of Trustees provide broad guidance and establish basic policies. The Institute depends primarily on tuition to cover its operational costs.

Objectives

As established in its Charter: "The basic objective of this institution shall be to provide competent educational programs at the collegiate level through which qualified students may achieve a maximum development of their individual talents as preparation and inspiration for productive and rewarding careers in private or public services; and in furtherance thereof to establish and carry on a non-profit educational institution offering programs for a sound engineering, technical, aeronautical, astronautical, and general education; to provide for the delivery and holding of classes, lectures, conferences, public meetings, and exhibitions, and to carry on such other activities, including the conducting of research, which are calculated directly or indirectly to advance the objectives of the educational programs of the institution; to gather, receive, and disseminate such information as may seem helpful in the furtherance of the objectives of the institution; and to confer appropriate Baccalaureate and Associate degrees and diplomas or other certificates of accomplishment or merit."

Accreditation and Affiliation

Embry-Riddle Aeronautical Institute is a member of the National Council of Technical Schools, the American Association of Junior Colleges, the Southern Association of College and University Business Officers, the College and University Personnel Association, an affiliate institutional member of the American Society for Engineering Education, Aviation Technician Education Council, and is recognized by the United States Justice Department to admit foreign students. The institution is approved by the Florida State Approval Agency for Private Schools, and the Airframe and Powerplant Division and the Flight Division are approved by the Federal Aviation Agency (FAA). The Aeronautical Engineering, Airframe and Powerplant, and Flight Courses are approved by the Veterans Administration. Embry-Riddle Aeronautical Institute is listed as an institution of higher education in Part 3 of Education Directory published by the U. S. Department of Health, Education and Welfare.

The Associate Degree Aeronautical Engineering Technology Program is accredited by the Engineers' Council for Professional Development. This Council is the national acrediting body for engineering education, representing the following constituent members:

American Society of Civil Engineers
American Institute of Mining and Metallurgical and Petroleum Engineers
American Society of Mechanical Engineers
American Society for Engineering Education
American Institute of Chemical Engineers
The Engineering Institute of Canada
Institute of Aerospace Sciences
The Institute of Radio Engineers
National Council of State Boards of Engineering Examiners

Admission and Requirements

Embry-Riddle will admit persons who meet certain educational prerequisites depending on the curriculum concerned. Students attending Embry-Riddle will be required to maintain their personal conduct above reproach, attend classes regularly, dress properly and present a neat appearance at all times. An application for enrollment submitted by any person will be accepted on the basis that the candidate himself and his parents or guardian, if appropriate, understand and accept the conditions described above and all other regulations and policies of Embry-Riddle Aeronautical Institute contained herein.

Foreign Students

The credentials of applicants from foreign countries are evaluated in accordance with the general regulations governing admission. An application, photograph, and detailed transcripts of records must be submitted to the Director of Admissions six months in advance of the opening of the class in which the applicant seeks to gain admission. This will allow time for the exchange of necessary correspondence and documents relative to the securing of passports and visas for study in the United States.

Candidates for admission are required to consult the American Consulate or the American Embassy in their country of residence and make arrangements to take an English language examination. The results of this examination are an important factor in determining the acceptability of an applicant. Embry-Riddle must receive this information directly from the Consular Office before a decision concerning admission will be reached.

In addition, candidates for admission must complete all arrangements for the necessary American dollars to cover tuition and living expenses and must furnish advance proof of this according to the amount shown on the Certificate of Eligibility of the U. S. Immigration Service, Form I-20A. This also is an important factor in determining the acceptability of an applicant.

Schedules

Embry-Riddle Aeronautical Institute operates on a plan whereby the school calendar is divided into three 15-week trimesters each year. Classes are in session five days per week, Monday through Friday.

School Holidays

Memorial Day	Labor Day
Independence Day	Thanksgiving Day

FINANCES

Tuition

College of Engineering and Engineering Technology:
Full tuition, 12 to 18 credit hours ..... $350.00 per Trimester.
(Tuition for less than 12 credit hours or in excess of 18 credit hours is at the rate of $29.00 per Trimester hour).

Airframe and Powerplant Mechanic Division:
Full tuition ..... $350.00 per Trimester.

Flight Division:

Course	Price ($)*
Private Pilot	660.00
Commercial Pilot	2,510.00
Instrument	632.00
Multi-Engine (Light Twin)	400.00
(Twin Beech)	525.00
(DC-3)	900.00
Flight Instructor (Airplane & Instrument)	645.00
Ground School (per course)	105.00

*For F.A.A. minimum required hours. However, comparatively few persons are capable of qualifying for the various pilot ratings in the minimum prescribed time. Therefore, additional hours at rates shown on pages 43 to 48 should be contemplated. The amount of additional flying time each student will require varies, depending on his coordination and ability.

Fees (Non-Refundable)

Application	$ 10.00
Matriculation	10.00
Graduation (Payable at the beginning of a student's final trimester. Includes cap and gown and engraved diploma)	10.00

Dormitory Charges

Per Trimester $112.00

A deposit of $20.00 is required for a reservation. This deposit will be credited to the dormitory rental. Deposit is refundable only for cancellations received no later than 30 days prior to scheduled entry date.

Monthly Payment Plan

Embry-Riddle will permit certain qualified students to prorate tuition and dormitory charges by monthly payments of $87.50 and $28.00 respectively except that the first dormitory payment must cover two months. Students accepted for this plan must sign an agreement to pay in full.

Delinquent Accounts

Students whose accounts are in arrears will be denied registration for a new trimester, graduation, or the release of transcripts of their records.

Refunds

Students in good standing who have executed the required withdrawal forms may receive a refund of tuition and dormitory deposits at the following rates:

Week of Withdrawal	%
2nd	80
3rd	60
4th	40
5th	20
6th or more	none

Students expelled for misconduct will be required to depart without a refund regardless of the time of withdrawal.

Flight Accounts

Individuals who enroll in flight courses must deposit in advance the sum of $395.00 for flight instruction and $105.00 for ground school. However, students in a combined engineering and flight training curriculum may be exempt from the ground school charge depending on their engineering credit hours per trimester. Additional funds which a student wishes to deposit will be placed in a cash withdrawal account. Transfers to the flight account as required will be made at the students request. Withdrawals from flight accounts for personal expenses may not be made.

A student withdrawing from flight training prior to the completion of a course will receive a refund of the amount in his flight account computed as of two weeks after the date of withdrawal. A charge of $25.00 will be made for this transaction. However, funds remaining in a cash withdrawal account will be remitted without charge.

STUDENT SERVICES AND ACTIVITIES

Placement

Embry-Riddle conducts and has had noticeable success in placement service for the employment of all graduates. Employment cannot be guaranteed, but personal assistance is given to each graduate to secure a suitable position. This service is available to all Embry-Riddle graduates at any time subsequent to graduation.

Dormitories

Candidates for admission may request dormitory reservations in the space provided on the admission application. Two students are assigned to each room. Students must furnish a minimum of the necessary linens, which includes four sheets, two pillow cases, two blankets and sufficient towels.

Off-Campus Housing

Embry-Riddle does not maintain apartments or quarters for married students. However, apartments and homes are available in the vicinity of the school. Most apartments and homes for rent in the area are furnished. Several trailer parks are located within a few miles of the school for the convenience of those students owning or desiring to rent a trailer.

Student Mail

All personal mail should be addresed as follows:

January — April 1965	After April 30, 1965
Name	Name
% Embry-Riddle Aeronautical Institute	% Embry-Riddle Aeronautical Institute
P. O. Box 568, Biscayne Annex	P. O. Box 2411
Miami, Florida 33152	Daytona Beach, Florida

Students may continue to use this address while attending school regardless of whether or not they reside in the dormitories.

Baggage and Express

All baggage and express packages must be sent prepaid. These items should be addressed as follows:

January — April 1965	After April 30, 1965
Name	Name
% Embry-Riddle Student Counselor	% Embry-Riddle Aeronautical Institute
Room 139, Aviation Building	(Student Counselor)
3240 N. W. 27th Avenue	Daytona Beach Municipal Airport
Miami, Florida	Daytona Beach, Florida

Personal Finances

Students are urged to open local bank accounts for their personal convenience. Arrangements for personal drawing accounts with the school cashier for small accounts may be made.

Educational Loans

The Investment-In-Education Plan of Funds for Education, Inc., meets the requirements of Embry-Riddle Aeronautical Institute.

Under this Plan, advances up to $1250.00 per Trimester will be made for educational expenses which may include such items as tuition, fees, room and board, books, travel, etc.

Families living anywhere may apply and advances will be made to Embry-Riddle Aeronautical Institute or directly to the parent at the time school bills are due.

Contracts covering one, two, three, and four school years are available. The maximum amount advanced under any one contract is $10,000.00. The minimum advanced at any one time is $350.00.

Monthly repayment schedules can be arranged for periods ranging from four months to six years, depending on the school period covered.

A contract may be cancelled at any time without penalty.

Life and health insurance is included in all contracts.

Embry-Riddle Aeronautical Institute has no financial interest in, and derives no benefits from, the Investment-In-Education Plan. Mention of its availability is included in this bulletin only because of increasing interest in budget-payment programs.

Parents who wish to use the Plan, or who would like additional information about it, should write directly to the Funds for Education, Inc., 319 Lincoln Street, Manchester, New Hampshire.

The Tuition Plan, Inc.

The Tuition Plan, Inc., is offered as a convenient way of financing tuition, dormitory and other charges.

Under this deferred payment system the cost may be spread over one to four years. Life insurance for the parents of the student concerned is included.

Parents who wish to adopt The Tuition Plan to avoid large single payments at the beginning of each term receive a contract, which, when duly signed is forwarded to The Tuition Plan, Inc.

Under the one year plan, payments are paid in eight monthly installments beginning with the first month of the school year. Under the two year plan, 20 consecutive payments are made, under the three year plan, 30 consecutive payments are made and under the four year plan, 40 consecutive payments are made. Parent life insurance is automatically included with the two, three or four year plans.

Application for a Tuition Plan contract may be secured upon request to the Tuition Plan, Inc., One Park Avenue, New York, New York.

The United Student Aid Funds Plan

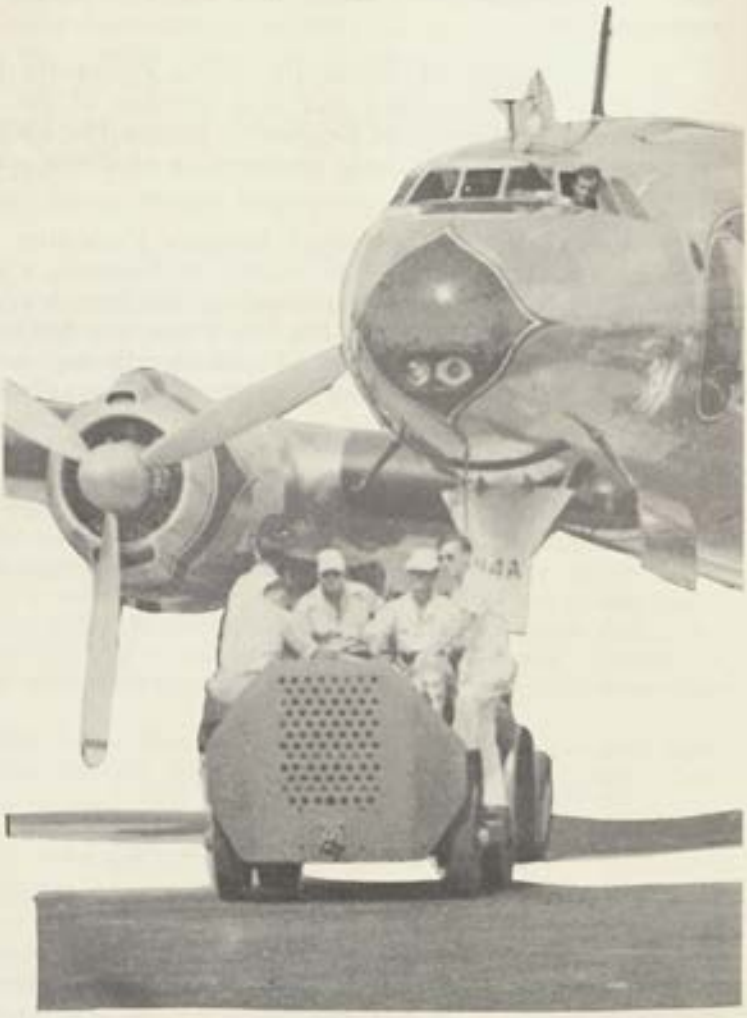
United Student Aid Funds, Inc., is a private, non-profit service corporation which endorses low-cost, long-term loans made by local banks to needy college students. A student who has completed his freshman year may borrow up to $1,000. for each academic year. A student attending a school which operates on a trimester system may borrow up to $1,500. per calendar year, or a total of not more than $3,000. Repayment of such loans begins five months after graduation, and payments are spread over a period of thirty-six monthly installments. Interest will not exceed six percent per annum. Any interested student should contact his hometown bank or write directly to the United Student Aid Funds, Inc., College Square, Indianapolis 5, Indiana.

Fraternities

Fraternities create a background for professional and social life at Embry-Riddle Aeronautical Institute. They encourage scholarship and leadership and assist their members to attain a healthy social outlook.

The Pi Chapter of Sigma Phi Delta Fraternity is located on the Embry-Riddle campus and is a member of the International Professional Fraternity of Engineers. Sigma Phi Delta is an engineering fraternity, and only engineering students are eligible for membership.

Alpha Eta Rho International Aviation Fraternity was founded on April 10, 1929, at the University of Southern California, and the Epsilon Rho Chapter is located on the Embry-Riddle campus. Since its founding, the Alpha Eta Rho Fraternity has been dedicated to the safety and promotion of aviation throughout the world. Presently, fraternity chapters range from Miami, Florida, to Seoul, Korea.


30

COLLEGE OF ENGINEERING AND ENGINEERING TECHNOLOGY

GENERAL INFORMATION

ADMISSION

Freshman Students

Embry-Riddle College of Engineering and Engineering Technology will consider for admission graduates of recognized high schools or other accredited secondary schools. Applicants who have been awarded high school equivalency diplomas also will be considered. All applications for admission must be accompanied either by an authenticated high school record or photo copy of an equivalency diploma. In the case of an equivalency diploma a transcript of high school work completed should be included.

Transfer Students

Students who have satisfactorily completed work at accredited colleges, universities, or technical institutes may be admitted with advanced standing provided they were in good standing at the institution previously attended. Credits will be transferred only for those subjects completed with a grade of C or better. Persons wishing to transfer credits should have a properly authenticated transcript mailed by the issuing institution.

Transfer students who enroll in an Embry-Riddle program must fulfill all requirements of the applicable curriculum and must complete no less than thirty credit hours in residence prior to graduation.

REGISTRATION AND PLACEMENT TESTS

Applicants who have been officially accepted will be promptly notified, and will receive registration instructions prior to enrollment date.

All freshmen entering the College of Engineering and Engineering Technology, except those admitted with advanced standing, will be required to take placement tests. The results of these tests are not used as a basis for admission or rejection, but are for the purpose of determining proper academic placement. When the scores on these tests indicate a need for improving a student's foundation in mathematics, physics and English, he will be required to complete certain non-credit orientation subjects during his initial trimester.

ACADEMIC REGULATIONS

Trimester Hour Credits

All credits are recorded in terms of trimester hours. A trimester hour of credit is given for one 55-minute lecture per week throughout the 15-week trimester. In counting credits earned in the laboratory, a trimester hour is considered to be two laboratory hours requiring outside preparation or three laboratory hours requiring little or no outside preparation. Students auditing a course receive neither a grade nor credits.

Grading Procedure

Grade	Relative Standing	Honor Points per Trimester Hour
A	Superior	4
B	Above Average	3
C	Average	2
D	Below Average	1
F	Failure	0
WF	Withdrawal while failing during the last three-fourths of the trimester	0
WP	Withdrawal while passing during the last three-fourths of the trimester	0
W	Withdrawal during the first fourth of the trimester	0
S	Surveying the course with credit	0
U	Auditing the course without credit	0
G	Passing but incomplete work	0

An incomplete grade is given when a student is unable to complete required work for reasons beyond his control. An incomplete grade must be removed within the first six weeks of the next trimester he is in attendance or the G will revert to an F.

An F on a student's record is permanent. Although the course is repeated and a new grade is obtained, the F will remain on his record for the trimester concerned.

A student may withdraw from a course during the first fourth of a trimester and receive a grade of W. If he withdraws after this period of time, he will receive a WF (Withdrawal while failing) or a WP (Withdrawal while passing). A WF on an academic record is equivalent to an F.

Honor Point Average

The honor point average is designed to give a cumulative numerical equivalent of grades earned. It is computed by dividing the total number of honor points earned by the total number of credits

attempted. Honor points are accumulated for grades received as indicated in the preceding paragraph "Grading Procedure". When a WP, W or the U appears with a subject, the credit value of the subject does not count as credits attempted. When an S appears with a subject, credits for the subject are counted for graduation requirements but do not affect the honor point average.

Honor Student

An honor student is one who has attained an honor point average of 3.5 or better for the previous trimester provided he was enrolled in three or more subjects.

Academic Board

The Academic Board, comprised of certain faculty members, reviews the progress of each student, determines eligibility of students for graduation and recommends action to the Dean of Engineering as appropriate. A student's progress is reviewed with respect to:

1. Completion of required subjects in proper sequence.
2. Grades and honor points average obtained.

Graduation Requirements

In order to graduate from any curriculum a student must:

1. Successfully complete all required subjects.
2. Have obtained a final honor point average of 2.0 or better.
3. Satisfy all financial obligations.

Academic Probation

Academic probation is imposed when the honor point average of any student falls below the following levels:

Trimester	1	2	3	4	5	6
Honor Point Average	1.5	1.6	1.7	1.8	1.9	2.0

Probation status will be removed whenever the honor point average of the student concerned is equal to or greater than the levels shown above. The award of a degree or certificate will not be made to anyone on academic probation.

Dismissal

A student is subject to dismissal if:

1. At the end of a trimester his honor point average is excessively low.
2. He fails a subject for a second time or fails a subject in which he previously withdrew while failing.
3. His conduct is prejudical to the reputation of the school.
4. He fails to satisfy his financial obligations to the Institute.

Absenteeism

Students should attend classes and other academic activities regularly and punctually. Absence from any class will be considered excessive when the number of unexcused instances of absence exceeds the number of credits for the course. A student will lose 1 honor point for each unexcused excessive absence unless he is an honor student. Absence may be excused for illness, emergencies or other extenuating circumstances. Students who miss work or tests because of an excused absence may have the privilege of accomplishing makeup work.

Progress Reports

At mid-term and at the completion of each trimester, transcripts of students' records are sent to parents or sponsors of all minor students and all others who have requested this service.

CURRICULA

ORIENTATION PROGRAM

Orientation study is a full time program extending through a complete trimester. The purpose of the orientation trimester is to prepare students for college level subjects offered in the various engineering curricula. Credits earned in Orientation do not apply to graduation requirements.

Subject No.	Subject	Lecture	Lab	Credits
W-1	Elementary Algebra	5	0	0
W-2	Plane Geometry	5	0	0
W-3	Physics	5	0	0
W-4	English	5	0	0
W-5	Trigonometry	5	0	0

AERONAUTICAL ENGINEERING PROGRAM

This program is designed to provide the graduating student with adequate, current basic and specialized technical knowledge to successfully pursue a career in aeronautical engineering.

In preparation for this career, engineering students must master the basic sciences of Mathematics, Physics, Mechanics, Chemistry, Electricity and Thermodynamics; and such special subjects as Aerodynamics, Graphics, Aircraft Design and Structures and Aircraft Systems.

An engineer's ability to speak and write effectively is an important element of his professional qualification. His ultimate level of achievement also will be influenced by his understanding of and ability to get along with people. Humanities and Social Studies, therefore, form an important part of this curriculum.

Students become familiar with wind tunnel testing techniques and analysis of data in the wind tunnel laboratory. Other laboratories are devoted to the demonstration of certain principles and laws of Physics and Chemistry. The shop laboratory familiarizes the student with sheet metal manufacturing methods, machining and welding. Laboratory training is conducted for the purpose of teaching nomenclature and functioning of airframes, aircraft systems and propulsion systems.

This well rounded program prepares the Embry-Riddle Aeronautical Engineer graduate for employment in all facets of the air and space industry and he can be expected to produce immediate results. In addition, he will have a sound foundation for further development of his knowledge and ability in this field.

BACHELOR OF SCIENCE DEGREE CURRICULUM in AERONAUTICAL ENGINEERING

9 Trimesters (15 weeks each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits
FIRST	HU-101	English Composition	2	0	2
	MA-101	College Algebra	4	0	4
	MA-102	Trigonometry and Analytic Geometry	5	0	5
	ME-101	Engineering Drawing I	0	6	2
	PH-101	Physics I	4	3	5
					18
SECOND	HU-102	Technical Report Writing	2	0	2
	MA-103	Differential Calculus	5	0	5
	ME-102	Engineering Drawing II	0	6	2
	ME-201	Statics	5	0	5
	PH-102	Physics II	3	3	4
					18

THIRD	HU-103	Psychology	2	0	2
	MA-104	Integral Calculus	4	0	4
	ME-202	Descriptive Geometry	0	6	2
	ME-203	Dynamics	5	0	5
	ME-204	Fluid Mechanics	3	0	3
	AE-201	Airframe Laboratory	0	2	1
					17
FOURTH	HU-202	Public Speaking	2	0	2
	HU-203	Economics I	2	0	2
	ME-205	Strength of Materials	5	0	5
	ME-206	Thermodynamics	4	0	4
	AE-202	Aerodynamics I	5	0	5
					18
FIFTH	AE-301	Aerodynamics II	5	0	5
	AE-302	Wind Tunnel Laboratory	2	2	2
	AE-303	Aircraft Structures I	5	0	5
	AE-304	Principles of Aircraft Design	3	0	3
	AE-305	Aircraft Drafting	0	6	2
	AE-306	Aircraft Propulsions Systems Lab	0	2	1
					18
SIXTH	HU-301	Business English	2	0	2
	ME-301	Metallurgy & Materials Science	3	0	3
	ME-302	Materials & Processes Laboratory	0	2	1
	AE-307	Aircraft Structures II	5	0	5
	AE-308	Aircraft Detail Design	0	6	3
	AE-309	Airplane Design	0	6	3
	AE-310	Aircraft Systems Laboratory	0	2	1
					18

SEVENTH	HU-401	Economics II	3	0	3
	HU-402	American History	3	0	3
	MA-401	Differential Equations	3	0	3
	ME-401	Heat Transfer	3	0	3
	CH-201	Chemistry I	2	2	3
	AE-401	Supersonic Aero-dynamics I	3	0	3
					18
EIGHTH	HU-403	World History	3	0	3
	HU-404	Philosophy	3	0	3
	ME-402	Mechanical Vibrations	3	0	3
	CH-202	Chemistry II	2	2	3
	EE-401	Electrical Engineering Principles	3	0	3
	AE-402	Jet and Rocket Propulsion	3	0	3
					18
NINTH	HU-501	Principles of Industrial Management	3	0	3
	MA-402	Advanced Calculus	3	0	3
	MA-403	Computer Programming	3	0	3
	EE-501	Electronics for Engineers	2	2	3
	AE-501	Supersonic Aerodynamics II	3	0	3
	AE-502	Space Mechanics	3	0	3
					18
TOTAL CREDITS FOR GRADUATION					161

AERONAUTICAL ENGINEERING TECHNOLOGY PROGRAMS

The graduate Engineering Technician is a vital part of the "engineering manpower team". He develops and translates ideas and designs of engineers and scientists into plans and blueprints that can be understood and used by skilled workmen. The engineering technician's responsibilities parallel those of the engineer. His knowledge in engineering design enables him to assume duties in all phases of the aircraft, missile, and spacecraft industry. His talents are needed and utilized along the line from preliminary design through flight test and final production.

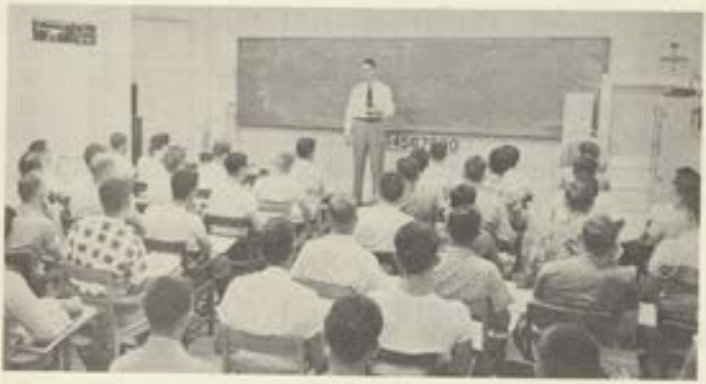
Embry-Riddle's programs in engineering technology provide collegiate education leading to Bachelor and Associate of Science Degrees. They are conducted similar to the engineering program, but the subject matter and scope are reduced accordingly.

BACHELOR OF SCIENCE DEGREE CURRICULUM in AERONAUTICAL ENGINEERING TECHNOLOGY

8 Trimesters (15 weks each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits
FIRST	HU-101	English Composition	2	0	2
	MA-101	College Algebra	4	0	4
	MA-102	Trigonometry and Analytic Geometry	5	0	5
	ME-101	Engineering Drawing I	0	6	2
	PH-101	Physics I	4	3	5
					18
SECOND	HU-102	Technical Report Writing	2	0	2
	MA-103	Differential Calculus	5	0	5
	ME-102	Engineering Drawing II	0	6	2
	ME-201	Statics	5	0	5
	PH-102	Physics II	3	3	4
					18
THIRD	HU-103	Psychology	2	0	2
	MA-104	Integral Calculus	4	0	4
	ME-202	Descriptive Geometry	0	6	2
	ME-203	Dynamics	5	0	5
	ME-204	Fluid Mechanics	3	0	3
	AE-201	Airframe Laboratory	0	2	1
					17
FOURTH	HU-202	Public Speaking	2	0	2
	HU-203	Economics I	2	0	2
	ME-205	Strength of Materials	5	0	5
	ME-206	Thermodynamics	4	0	4
	AE-202	Aerodynamics I	5	0	5
					18

FIFTH	AE-301	Aerodynamics II	5	0	5
	AE-302	Wind Tunnel Laboratory	2	2	2
	AE-303	Aircraft Structures I	5	0	5
	AE-304	Principles of Aircraft Design	3	0	3
	AE-305	Aircraft Drafting	0	6	2
	AE-306	Aircraft Propulsion Systems Laboratory	0	2	1
					18
SIXTH	HU-301	Business English	2	0	2
	ME-301	Metallurgy & Materials Science	3	0	3
	ME-302	Materials & Processes Laboratory	0	2	1
	AE-307	Aircraft Structures II	5	0	5
	AE-308	Aircraft Detail Design	0	6	3
	AE-309	Airplane Design	0	6	3
	AE-310	Aircraft Systems Laboratory	0	2	1
					18
SEVENTH	HU-401	Economics II	3	0	3
	HU-402	American History	3	0	3
	MA-401	Differential Equations	3	0	3
	ME-401	Heat Transfer	3	0	3
	CH-201	Chemistry I	2	2	3
	AE-401	Supersonic Areo-dynamics I	3	0	3
					18
EIGHT	HU-403	World History	3	0	3
	HU-404	Philosophy	3	0	3
	CH-202	Chemistry II	2	2	3
	EE-401	Electrical Engineering Principles	3	0	3
	AE-402	Jet and Rocket Propulsion	3	0	3
		Technical Elective	—	—	3
					18
TOTAL CREDITS FOR GRADUATION					143



ASSOCIATE OF SCIENCE DEGREE CURRICULUM in AERONAUTICAL ENGINEERING TECHNOLOGY

6 Trimesters (15 weeks each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits
FIRST	HU-101	English Composition	2	0	2
	MA-101	College Algebra	4	0	4
	MA-102	Trigonometry and Analytic Geometry	5	0	5
	ME-101	Engineering Drawing I	0	6	2
	PH-101	Physics I	4	3	5
					18
SECOND	HU-102	Technical Report Writing	2	0	2
	MA-103	Differential Calculus	5	0	5
	ME-102	Engineering Drawing II	0	6	2
	ME-201	Statics	5	0	5
	PH-102	Physics II	3	3	4
					18

THIRD	HU-103	Psychology	2	0	2
	MA-104	Integral Calculus	4	0	4
	ME-202	Descriptive Geometry	0	6	2
	ME-203	Dynamics	5	0	5
	ME-204	Fluid Mechanics	3	0	3
	AE-201	Airframe Laboratory	0	2	1
					17
FOURTH	HU-202	Public Speaking	2	0	2
	HU-203	Economics I	2	0	2
	ME-205	Strength of Materials	5	0	5
	ME-206	Thermodynamics	4	0	4
	AE-202	Aerodynamics I	5	0	5
					18
FIFTH	AE-301	Aerodynamics II	5	0	5
	AE-302	Wind Tunnel Laboratory	2	2	2
	AE-303	Aircraft Structures I	5	0	5
	AE-304	Principles of Aircraft Design	3	0	3
	AE-305	Aircraft Drafting	0	6	2
	AE-306	Aircraft Propulsion Systems Laboratory	0	2	1
					18
SIXTH	HU-301	Business English	2	0	2
	ME-301	Metallurgy and Materials Science	3	0	3
	ME-302	Materials and Processes Laboratory	0	2	1
	AE-307	Aircraft Structures II	5	0	5
	AE-308	Aircraft Detail Design	0	6	3
	AE-309	Airplane Design	0	6	3
	AE-310	Aircraft Systems Laboratory	0	2	1
					18
	TOTAL CREDITS FOR GRADUATION				107

AERONAUTICAL DRAFTING TECHNOLOGY PROGRAM

This program is designed to meet the needs of the aerospace age for design draftsmen. It contains certain basic mathematics and science subjects and all of the engineering drafting and design courses offered in the engineering degree curricula.

AERONAUTICAL DRAFTING TECHNOLOGY

4 Trimesters (15 weeks each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits
FIRST	HU-101	English Composition	2	0	2
	MA-101	College Algebra	4	0	4
	MA-102	Trigonometry and Analytic Geometry	5	0	5
	ME-101	Engineering Drawing I	0	6	2
	PH-101	Physics I	4	3	5
					18
SECOND	HU-102	Technical Report Writing	2	0	2
	ME-102	Engineering Drawing II	0	6	2
	ME-201	Statics	5	0	5
	PH-102	Physics II	3	3	4
	AE-201	Airframe Laboratory	0	2	1
		Technical or Humanities Elective	—	—	3
					17
THIRD	HU-103	Psychology	2	0	2
	HU-202	Public Speaking	2	0	2
	ME-202	Descriptive Geometry	0	6	2
	AE-310	Aircraft Systems Laboratory	0	2	1
	AE-304	Principles of Aircraft Design	3	0	3
	AE-305	Aircraft Drafting	0	6	2
		Technical or Humanities Electives	—	—	3
					15

FOURTH	HU-301	Business English	2	0	2
	HU-203	Economics I	2	0	2
	ME-301	Metallurgy and Materials Science	3	0	3
	ME-302	Materials & Processes Laboratory	0	2	1
	AE-308S	Aircraft Detail Design Survey	0	6	2
	AE-309S	Airplane Design Survey	0	6	2
		Technical or Humanities Electives	—	—	5
					17

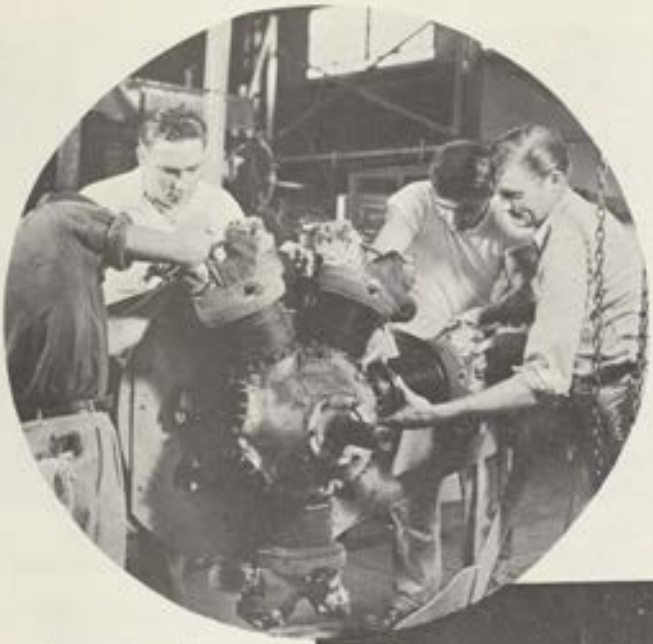
TOTAL CREDITS FOR CERTIFICATE 67

COURSE DESCRIPTIONS

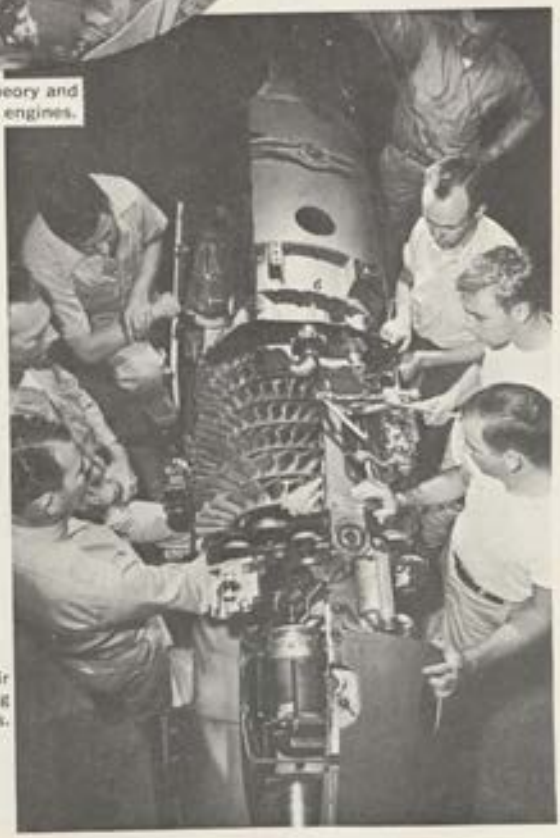
1. HUMANITIES

HU-101. ENGLISH COMPOSITION 2 Credits

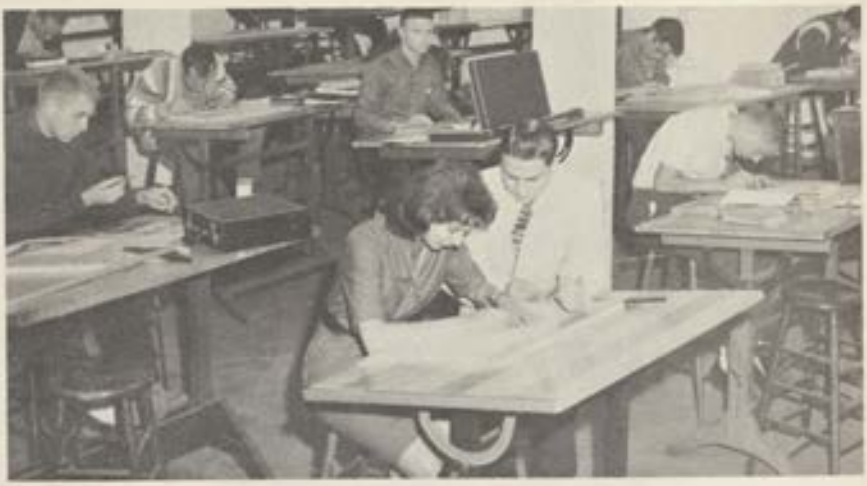
This course is designed to build individual proficiency in the expression of thoughts in writing. It consists of instruction in sentence construction, parts of speech, vocabulary and rules of writing. Instruction stresses the importance to an engineer of being able to write well. During the course students prepare compositions, business correspondence and long form reports.



Students learn piston engine theory and construction by dis-assembling engines.



Modern jet maintenance and repair is taught by working under instruction on actual engines.



One of the Engineering Drafting Rooms

Wind tunnel tests for applied aerodynamics

HU-102. TECHNICAL REPORT WRITING 2 Credits

The student becomes familiar with and adept at handling all phases of industrial publications. Includes memorandum writing; staff studies; long form technical reports; advertising and illustrations; graphs, tables, and charts; etc. Prerequisite: HU-101.

HU-103. PSYCHOLOGY 2 Credits

A thorough, penetrating discussion in adjustment and understanding, emphasizing their importance to the engineer. The study probes the fields of frustration responses, defense mechanisms, psychoses, and neuroses, etc., relating them to personnel problems in industry.

HU-202. PUBLIC SPEAKING 2 Credits

Fundamentals of voice production, improvement of vocal quality, pitch and intensity. Group and individual exercises for improving articulaton and enunciation of speech sounds. Practice in analysis and delivery of various types of public speeches. Introduction to organization, phrasing and diction. Prerequisite: HU-101.

HU-203. ECONOMICS I 2 Credits

Introduction of fundamental economic concepts, such as production, money, banking, labor, business organization, international trade, and government fiscal policy. Current economic problems.

HU-401. ECONOMICS II 3 Credits

A continuation of Economics I, which is a prerequisite.

HU-301. BUSINESS ENGLISH 2 Credits

Fundamentals of business writing, commercial and government writing, employment correspondence, and job application. Prerequisite: HU-101.

HU-402. AMERICAN HISTORY 3 Credits

(1865 to the present). Reconstruction; the age of big business; the U. S. as a world power; World Wars I and II. The great depression and its aftermath. Studied in an interpretative survey.

HU-403. WORLD HISTORY 3 Credits

Designed primarily as a survey of the development and evolution of Western civilization from 1660 to the present. Emphasis is placed on contemporary civilization and culture.

HU-404. PHILOSOPHY 3 Credits

An integrated study of man and the concepts of his culture, including views about himself, society, philosophy and the arts.

HU-501. PRINCIPLES OF INDUSTRIAL MANAGEMENT — 3 Credits

Management processes; work simplification; personnel administration; labor-management relations; financial management; business law and marketing. Prerequisite: HU-401.

2. MATHEMATICS

MA-101. COLLEGE ALGEBRA — 4 Credits

Fundamental algebraic operations. Real and complex numbers. Operations with polynomials and fractional expressions. Equations. Functions and graphs. Inequalities. Exponents. Logarithms. Series. Determinants.

MA-102. TRIGONOMETRY AND ANALYTIC GEOMETRY — 5 Credits

Trigonometric functions. Solution of right and oblique triangles. Trigonometric formulas. Identities. Radian measure. Graphs of functions. Trigonometric equations. Functions and graphs. Equations of lines and conic sections. Translation and rotation of axes. Parameters. Polar curves. Corequisite: MA-101.

MA-103. DIFFERENTIAL CALCULUS — 5 Credits

Limits. Differentiation of algebraic, trigonometric, and exponential functions. Applications of first and second derivatives and the differential. Prerequisite: MA-102.

MA-104. INTEGRAL CALCULUS — 4 Credits

Meaning and use of integration in problems of areas, volumes, centroids, moments. Partial derivatives. Multiple integrals. Series. Prerequisite: MA-103.

MA-401. DIFFERENTIAL EQUATIONS — 3 Credits

Treatment of ordinary differential equations including principal types of first and second order equations, simultaneous equations, and linear equations, with constant coefficients. Applications to physics and mechanics. The Leplace Transform. Prerequisite: MA-104.

MA-402. ADVANCED CALCULUS — 3 Credits

Convergence and limits; vector analysis; orthogonal functions; field theory; double, triple, line and surface integrals; transformation of integrals; Green and Stokes's Theorems. Prerequisite: MA-401.

MA-403. COMPUTER PROGRAMMING 3 Credits

Fundamentals of computers; use of computers for engineering problems; programming; FORTRAN; preparation of programs for engineering problems.

3. MECHANICAL

ME-101. ENGINEERING DRAWING I 2 Credits

Principles of lettering. Linework code and drafting method. The compass. Circles and tangents. Drawing instruments and their use. Geometric construction elements. Orthographic projection methods, 3-view sketches, and the final drawing.

ME-102. ENGINEERING DRAWING II 2 Credits

Continuation of Engineering Drawing I. Standard dimensioning practices and the use of sectional views, auxiliary view and rotations. Comparison of the following methods of portraying information: orthographic projection, isometric, oblique, and perspective drawings. Basic elements of good design, manufacturing process, and principles of using detailed and assembly drawings. Prerequisite: ME-101.

ME-202. DESCRIPTIVE GEOMETRY 2 Credits

Principles of orthographic projection to the solution of three-dimensional problems. Study of space relationships of points, lines, and planes. Intersection and development of surfaces. Prerequisite: ME-102.

ME-201. STATICS 5 Credits

Fundamental concepts and definitions of forces, moments, and couples. Resultants of force systems. Equilibrium of coplanar force systems. Equilibrium of trusses and cables. Friction. Corequisite: MA-103.

ME-203. DYNAMICS 5 Credits

Motion of particles and rigid bodies, laws of motion, motion diagrams, work, enery, impulse, and momentum. Corequisite: MA-104.

ME-204. FLUID MECHANICS 3 Credits

Fluid properties and definitions. Fluid statics. Fluid-flow concepts and basic equations. Viscous effects. Reynolds number. Dimensional analysis and dynamic similitude. Fractionless compressible flow and two-dimensional ideal fluid flows. Prerequisites: PH-101, Corequisite: MA-104.

ME-205 STRENGTH OF MATERIALS 5 Credits

Stresses and strain in tension, compression and sheer. Riveted joints and welded joints. Torsion of shafts. Shear and moment in beams. Stresses in beams. Deflection of beams. Fixed and continuous beams. Beams of constant strength. Combined stresses. Columns. Deflection of beams by area-moment method. Mohr's circle. Prerequisite: ME-203.

ME-206. THERMODYNAMICS 4 Credits

The various processes of energy exchanges between heat and mechanical power with certain gases and vapors for the design of all types heat engines, turbines, missiles, compressors, and refrigerators. A study of all basic laws and principles governing both the non-flow and steady-flow processes fundamental in performance cycles of equipment mentioned, whether by use of different ideal gases, vapors, or mixtures. Prerequisite: MA-104, PH-102.

ME-301. METALLURGY AND MATERIALS SCIENCE 3 Credits

A study of the fundamental nature of metals, alloys, and plastics with emphasis on those used in the aircraft industry. Crystal struture, crystallization, and granular properties of materials. Phase and equilibrium diagrams. Heat treatment of steel and other alloys. Surface hardening methods and methods of shaping materials. Various physical tests of materials. Materials-joining processes. Corrosion and its prevention. High temperature problems. Prerequisite: PH-102.

ME-302. MATERIALS AND PROCESSES LABORATORY 1 Credit

Sheet metal. Welding. Riveting, power grinding. Power saw, nibbler, drill press, lathe, rolls, crimping machine. Basic shop procedures. Corequisite: ME-301.

ME-401. HEAT TRANSFER 3 Credits

Thermal conduction. Dimensional analysis. Free and forced convection. Conduction and convection and radiation combined. Experimental establishment of conductivities and emissivities. Prerequisites: PH-102, MA-104.

ME-402. MECHANICAL VIBRATIONS 3 Credits

Fundamental principles. Rotation. Simple harmonic motion. Complex numbers. Undamped and damped free vibration. Forced vibration. Two-degrees of freedom. Multi-mass torsional and transverse systems. Equivalent torsional systems. Balancing. Dynamic Dampers. Prerequisite: ME-203.

4. SCIENCE

PH-101. PHYSICS I, MECHANICS AND HEAT WITH LABORATORY — 5 Credits

Vector and scalar quantities. Newton's laws of motion and gravitation. Friction. Work. Energy. Power. Torque and rotational motion. Momentum. Curvilinear Motion. Elastic properties of matter. Fluids at rest and in motion. Properties of gases. Heat. 4 lectures per week and one 3-hour laboratory per week. Co-requisite: MA-102.

PH-102. PHYSICS II, SOUND, ELECTRICITY AND LIGHT WITH LABORATORY — 4 Credits

Wave motion, sound waves, acoustics. Fundamental laws of electricity and magnetism. Electrostatic and electromagnetic field theory. Induced electromagnetic forces. Power. Capacitance. Electrical instruments. Nature of light, index of refraction, refraction by lenses, reflection from mirrors, diffraction, and interference. 3 lectures per week and one 3-hour laboratory per week. Prerequisite: PH-101.

CH-201. CHEMISTRY I WITH LABORATORY — 3 Credits

Fundamental principles of chemistry including basic atomic theory, valence and oxidation number, symbols, formulas, equations, and calculations. Properties of hydrogen and oxygen. Factors affecting rate of reaction. The Periodic System. Types of solutions, acids, bases, and salts. Computation of molarity, normality, and pH.

CH-201. CHEMISTRY II WITH LABORATORY — 3 Credits

Equilibrium and computations involving various equilibriums. Halogens, sulphur, nitrogen, and their compounds. Iron and the chemistry. Prerequisite: CH-201.

EE-401. ELECTRICAL ENGINEERING PRINCIPLES — 3 Credits

Fundamental principles of electric and magnetic circuits and the application of these principles to the theory and performance of direct and alternating-current machines. A study of DC and AC circuits, vacuum-tube characteristics, and electronic devices. Prerequisites: PH-102, MA-104.

EE-501. ELECTRONICS FOR ENGINEERS — 4 Credits

Fundamentals of electronics; electronic devices; electronic design, circuits and systems; communications and radar. Prerequisite: EE-401.

5. AERONAUTICAL

AE-202. AERODYNAMICS I — 5 Credits

A study of the atmosphere and the fundamental dynamics and thermodynamics of air. Laminar and turbulent boundary layers and vortex motion. Development of lift drag and moment equations and their variation with Mach number and Reynolds number. Supersonic airfoil theory. Correlating factors influencing wing design. Theories of drag and their application. Momentum, blade element, and vortex theories of propellers. Prerequisites: MA-104, ME-204.

AE-301. AERODYNAMICS II — 5 Credits

Static performance, including power required and power available for level flight. Effect of weight and altitude on power climb performance, ceiling determination, and time to climb. Special performance problems including take-offs and landings, range, and endurance. Maneuvers such as spins, stalls, turning, gliding and diving. Theory of control surfaces and their design. Longitudinal, lateral and directional stability and control. Prerequisite: AE-202.

AE-401. SUPERSONIC AERODYNAMICS I — 3 Credits

Review of thermodynamics and mechanics principles. Flow in duct, stagnation and sonic throat, normal shock, supersonic Machmeter. Two dimensional flow; flow around corner, Prandtl-Meyer corner, expansion hodograph, limiting speed. The oblique shock, Rankine-Huguenot formulaes, shock polar, blunt nose, airfoil analysis by shock, expansion method. Aircraft flight performance. Prerequisites: ME-301, AE-301.

AE-501. SUPERSONIC AERODYNAMICS II — 3 Credits

Approximate theories: Linear (Ackerett) and Busemann series. Supersonic Wind Tunnels: Blowdown (constant pressure and constant mass), indraft, continuous. Wave reflection, second throat, Three dimensional flow, boundary layer drag, induced drag. Wings: Sweepback, rectangular, trapezoidal, delta. Busemann's biplane. Performance calculation, jet engine performance, acceleration and rate of climb. Prerequisite: AE-401.

AE-201. AIRFRAME LABORATORY — 1 Credit

Airframe configurations and various aerodynamic and structural design features.

AE-302. WIND TUNNEL LABORATORY 2 Credits

Experiments on tunnel calibration. Two dimensional wing pressure distribution and calculation of airfoil characteristics with and without flaps deflected. Profile drag by the wake survey rake method. Down wash and vortex motion for finite airfoil. Wing flow visualization in two-dimensional smoke tunnel. Laminar and turbulent boundary layer phenomenon. 3 hours laboratory. Prerequsite: AE-202. Corequisite: AE-301.

AE-303. AIRCRAFT STRUCTURES I 5 Credits

General procedures. Equilibrium of forces. Space structures. Inertia forces and load factors. Moment of inertia. Mohrs circles. Shear and bending moment diagrams. Shear and bending stresses in symmetrical beams. Prerequisite: ME-205.

AE-307. AIRCRAFT STRUCTURES II 5 Credits

A study of beams with unsymmetrical cross sections. Analysis of typical members of semi-monocoque structures. Mechanical properties of aircraft materials. Analysis of joints and fittings. Design of compression members. Deflection of structures. Prerequisite: AE-303.

AE-304. PRINCIPLES OF AIRPLANE DESIGN 3 Credits

Types of airplanes and their design limitations and consideration. Wing design including airfoil and planform selection. Weight estimate. Powerplant selection. Materials of construction. Detail design consideration. Landing gear design. Tail surface design. Control systems. Fuselage design. Preliminary performance calculations. Prerequisite: AE-202.

AE-305. AIRCRAFT DRAFTING 2 Credits

General conventions. Layout drawings, detail drawings and assembly drawings. Local and general notes. Linework and lettering quality. Dimentioning conventions. Drafting of formed sheet metal parts, welded tube structures, mechanical parts, extrusions and standard aircraft parts. 6 hours drafting. Prerequisite: ME-202.

AE-308. AIRCRAFT DETAIL DESIGN 3 Credits

Projects include structural and mechanical design and specification of shop processes. Selection of various AN and NAS standard parts. Design of riveted, bolted and welded aircraft parts. Design of control cable and swedged end-fitting, control push-pull rod with turnbuckle, and end-fittings and torque tube with hinge bearing. Selection of optimum skin thickness and stiffener spacing in wing two-cell box beam. Prerequisite: AE-303. Corequisite: AE-307.

AE-309. AIRPLANE DESIGN 3 Credits

Design considerations; selection of configuration; arrangement of wing, landing gear, empennage, fuselage, cabin and engine. Gross weight estimate. Engine and equipment selection. Wing planform determination. Preliminary flight performance check. Weight and balance drawing. Airplane parasite drag estimation. Selection of optimum airfoil and peak efficiency propeller. Three-view drawings. Flap design and performance estimate. Thrust horsepower required and available, versus velocity; maximum velocity; maximum velocity, excess horsepower, rate of climb and ceiling. Horizontal distance to takeoff over fifty-foot obstacle. Range and endurance. Prerequisite: AE-202. Corequisite: AE-301.

AE-306. AIRCRAFT PROPULSION SYSTEMS LABORATORY 1 Credit

A study of piston, jet, and rocket powerplants used in aircraft.

AE-310. AIRCRAFT SYSTEMS LABORATORY 1 Credit

Laboratory work with hydraulic, electric, propeller and fuel system mock-ups and cutaways.

AE-402. JET AND ROCKET PROPULSION 3 Credits

A study of ramjets, pulsejets, turbojets, and turboprops. Thrust and propulsion, engine efficiencies, fuel consumptions, nozzle flows and Rayleigh and Fanno line conditions. Subsonic and supersonic diffusers. Mass flow. Energy transfer. Centrifugal and axial compressors. Engine and aircraft flight performance. Solid and liquid propellant rocket motors. Prerequisite: AE-401.

AE-404. AIRCRAFT SPECIAL PROJECTS (Elective) 2 Credits

A course designed to require the student to do original work in the field of Aeronautical Engineering and related subjects. The student is assigned to a faculty member who directs the student's work toward a definite goal. The student designs and fabricates his project and presents a written report.

AE-502. SPACE MECHANICS 3 Credits

Review of mathematical and mechanical fundamentals including vectors. The two-body problem; orbits, satellite launch; cotangential transfer between circular orbits; interception and rendezvous; long range ballistic trajectories. Gyrodynamics and Gyroscopic instruments, precession and nutation, gyrocompass, stable and three-axes platform, inertial navigation. Vehicle motion. Performance and Optimization single and multi-stage rocket, flight trajectories, utilization of propellant, gravity turn. Generalized theories of Mechanics: system with constraints, generalized coordinates, D'Alembert and Hamilton's principles, LaGrange equations, Missile Dynamics Analysis. Prerequisite: ME-203.

ORIENTATION (Non-credit Courses)

W-1. ELEMENTARY ALGEBRA

Fundamental operations of basic intermediate and advanced algebra. Real numbers. Polynomials. Rational fractions. Equations. Quadratic equations. Simultaneous equations. Graphs.

W-2. PLANE GEOMETRY

Plane geometry with emphasis on point, line, and surface problems. Angles, Triangles, Polygons, Circles and Ellipses.

W-3. PHYSICS

A general introductory course. English and metric system of measurement. Principles of mechanics, heat, light, sound, electricity and magnetism. Modern physics.

W-4. ENGLISH

A survey of English fundamentals and mechanics stressing the importance of punctuation, grammar, usage, and spelling.

W-5. TRIGONOMETRY

Basic trigonometric functions; solution of right triangles. Basic trigonometric identities. Logarithms of trigonometric functions. Tables and values of functions. Laws of exponents and radicals.

AIRFRAME AND POWERPLANT DIVISION

GENERAL INFORMATION

Introduction

The Airframe and Powerplant Division is an approved training center, operating under Air Agency Certificate #277, issued by the Federal Aviation Agency of the United States of America. Courses offered in this division give the student actual experience by "on the job" training. In the Embry-Riddle repair station, many types of engines, aircraft and accessories are overhauled and returned to service. This provides an opportunity for students to learn first hand the construction, operation, overhaul and maintenance of powerplants and structural components of aircraft.

Admission

Applicants will be considered for admission who have graduated from accredited high schools with satisfactory records. Non high school graduates who have been awarded high school equivalency diplomas or have completed work at accredited technical institutes with satisfactory grades and are in good standing at the last school attended also will be considered.

In certain cases, mature applicants who fail to meet the above requirements but present other suitable criteria, such as honorable service in the Armed Forces or employment experience will be considered for admission.

Schedule

The Airframe and Powerplant Division operates on a schedule which permits enrollment every 7½ weeks. Classes are in session 6 hours per day or 30 hours per week. At least 60% of the training during any trimester is conducted in the shop. School hours are from 7:30 A.M. to 2:00 P.M. daily, Monday through Friday.

Tuition

Course	No. Trimesters	Price Per Trimester ($)	Total ($)
A & P Mechanic	4	$ 350.00	$ 1,400.00
Airframe Mechanic	2½	350.00	875.00
Powerplant Mechanic	2½	350.00	875.00
Turbine Engine Technician	1	350.00	350.00
Tools			$ 61.00*
Books and Supplies			$ 33.37*

*Subject to change.

Grading System

The Airframe and Powerplant Division uses the numerical grading system of 0 to 100. Students are graded in three areas.

They are:

a. Results obtained on written examinations.

b. Performance in shop projects.

c. Application of effort, attention to duty, attitude and ability to get along with fellow students.

Grades are made a matter of permanent record and are available to the FAA and prospective employers. Embry-Riddle mails grades to a home address twice during a trimester for those who wish this service.

Awards

Embry-Riddle awards a Certificate of Graduation from the A & P Division to all students successfully completing any of the F.A.A. approved courses. This document certifies that the bearer has graduated from an FAA approved school. It must be presented to the appropriate official before taking the FAA A & P Mechanic license examinations.

Graduates of the Turbine Engine Technician Course receive a diploma.

Graduation Requirements

In order to qualify for the Certificate of Graduation or Turbine Engine Technician Diploma a student must satisfactorily complete the required subjects as listed in the various following curricula, and he must obtain an average of 70 or above in each subject. Any student who has grades below 70 will be required to repeat the subject.

CURRICULA

AIRFRAME AND POWERPLANT MECHANIC CURRICULUM

4 Trimesters (15 weeks each)

Trimester	Subject. No.	Subject	Hours
FIRST	SL-11	Basic Aircraft Science & Welding	225
	SL-12	Powerplant Science & System	225
			450
SECOND	SL-13	Aircraft Systems	225
	SL-14	Electrical Laboratory	225
			450
THIRD	SL-15	Propellers & Accessory Overhaul	225
	SL-16	Engine Overhaul & Maintenace	225
			450
FOURTH	SL-17	Aircraft Structures & Repairs	225
	SL-18	Aircraft Assembly & Weight and Balance	225
			450
		TOTAL	1800

AIRFRAME MECHANIC CURRICULUM

2½ Trimesters (15 weeks each)

Trimester	Subject. No.	Subject	Hours
FIRST	SL-11	Basic Aircraft Science & Welding	225
	SL-12	Aircraft Systems	225
SECOND	SL-14	Electrical Laboratory	225
	SL-17	Aircraft Structures & Repairs	225
THIRD	SL-18	Aircraft Assembly & Weight & Balance	225
		TOTAL	1125

POWERPLANT MECHANIC CURRICULUM

2½ Trimesters (15 weeks each)

Trimester	Subject. No.	Subject	Hours
FIRST	SL-12	Powerplant Science and Systems	225
	SL-14	Electrical Laboratory	225
SECOND	SL-15	Propellers and Accessory Overhaul	225
	SL-16	Engine Overhaul and Maintenance	225
THIRD	SL-18	Aircraft Assembly and Weight and Balance	225
		TOTAL	1125

FAA WRITTEN, PRACTICAL AND ORAL EXAMINATIONS

The final step in becoming a certificated mechanic is successful completion of the FAA written test (knowledge requirement) and practical and oral examination (skill requirement). A student may elect to take this test and examination wherever he chooses or take advantage of the certification program which Embry-Riddle Aeronautical Institute offers. This program is neither part of the regular curriculum nor are the hours counted as part of the minimum requirements. It consists of written tests, and practical and oral examinations. Each applicant must satisfactorily complete each phase of testing with a grade of 70% or better to be eligible for his FAA mechanics certificate. A fee of $25.00 is charged for this service which includes the use of necessary equipment and material.

TURBINE ENGINE TECHNICIAN PROGRAM

In order to provide Embry-Riddle graduates with the ability to engage in all phases of maintenance on modern aircraft a separate course in turbine engine overhaul and maintenance will be offered starting May 1965. The duration of this course is one trimester. American manufactured turbine engines used on airliners and helicopters will be studied.

All graduates from any of the various Embry-Riddle Aeronautical Institute curricula will be accepted. Those who graduated from other approved Airframe and Powerplant schools or persons with previous aircraft engine experience will be considered.

In certain cases, mature applicants who do not meet these requirements will be considered for admission upon presentation of other suitable criteria.

Each student who satisfactorily completes the Turbine Engine Technician course will be awarded a Diploma authenticated by an official of the school and bearing the school seal.

Tuition for one trimester	$350.00
Books, manuals, supplies	20.00*
*Subject to change	
TOTAL	$370.00

TURBINE ENGINE TECHICIAN CERTIFICATE CURRICULUM

1 Trimester (15 weeks)

Subject No.	Subject	Hours
JE-1	Introduction to turbine engines	30
JE-2	Work - power - energy	30
JE-3	Engine nomenclature and disassembly procedures	30
JE-4	Engine cleaning, inspection and repair	30
JE-5	Engine components	30
JE-6	Inspection and testing of accessories	30
JE-7	Thrust reversers, noise suppressors	30
JE-8	Turbine aircraft engine fuel systems	30
JE-9	Lubricants and lubrication systems	30
JE-10	Electrical power system	30
JE-11	Engine ignition, starters and thermocouple systems	30
JE-12	Air and anti-icing systems	30
JE-13	Assembly procedure	30
JE-14	Engine operation and test procedures	30
JE-15	Engine Trouble shooting	30
	TOTAL	450

COURSE DESCRIPTIONS

SL-11. BASIC SCIENCE AND WELDING

Basic training in the responsibility of a mechanic. Reading and understanding Federal Air Regulations. Review of high school mathematics, physics and drafting for the aviation mechanic. Introduction to aircraft, its major components and aircraft terms; woodwork, dope and fabric, requirements relative to quality of material and method of repairs; gas welding, brazing, silver soldering; use of electric and inert gas welding equipment.

SL-12. POWERPLANT SCIENCE AND SYSTEMS

Theory of engines and principles of operation; four-stroke cycle principle, cam rings, pistons, piston rings, cylinders, crankshafts, jet engine compressors, turbine blades, combustion chambers, exhaust ducts, inlet ducts, fuel controls and carburetion.

SL-13. AIRCRAFT SYSTEMS

Methods of repair or replacement of aircraft components; functions of pumps, pressure regulators, selector valves, actuators, relief valves, bypass valves, power brakes, steering devices and anti-skid controls, fuel systems and fuel management, cabin pressurization, heating, air conditioning, wing deicing and vacuum systems.

SL-14. ELECTRICAL LABORATORY

Fundamentals of electricity; use of special testing instruments and equipment; electrical power, resistance, Ohm's Law, aircraft circuits, measuring instruments, magnetism, generators, starters, A.C. and D.C. motors, inverters, alternators, radio installation, antenna installation, circuit breakers and anti-collision lights; proper wire size selection; soldering, bundle tying, installation and arrangements of junction boxes, and trouble shooting of circuits.

SL-15. PROPELLERS AND ACCESSORY OVERHAUL

Live engine accessory overhaul; repair and preservation of special propeller overhaul equipment and precision tools; theory and overhaul of propellers; use of overhaul and parts manuals; overhauling and testing magnetos, carburetors, starters, generators and ignition harnesses.

SL-16. ENGINE OVERHAUL AND MAINTENANCE

Disassembly, cleaning, inspection, repairing, reinspecting, assembly and testing live engines; compiling engine records; inspection of equipment and functions of engine overhaul, trouble shooting and maintenance; operation of manifold pressure, engine temperatures, power checks and fuel system management. Run-in period of complete engines.

SL-17. AIRCRAFT STRUCTURES AND REPAIR

Training and knowledge needed to overhaul and maintain modern aircraft; basic skills in the use of hand and power operated metal cutting tools; aluminum and aluminum alloys and their fabrication; heat treating, cold work and riveting; repair and overhaul of live aircraft; new aircraft structures and manufacturing techniques.

SL-18. AIRCRAFT ASSEMBLY, WEIGHT AND BALANCE

Final assembly of aircraft; rigging and adjustment; weight and balance; weighing aircraft; inspection and inspection procedures; servicing, ground handling, pre-flight checks, and final written test covering all subjects.

TURBINE ENGINE TECHNICIAN COURSE DESCRIPTION

JE-1. INTRODUCTION TO TURBINE ENGINES

History and development of gas turbines, theory of jet propulsion, types of reaction engines, ram-jets, pulse-jets, rockets, turbojet, turbofan and turboprop. Law of physics dealing with jet propulsion, Newton's Law, Boyles Law, Charles Law, Bernoulli's Principle and First Law of Thermodynamics.

JE-2. WORK, POWER AND ENERGY

A study of energy, work, force, power, thrust and thrust-horsepower, effect of airspeed on thrust, effect of air temperature on thrust, effect of air pressure on thrust, effect of altitude on thrust, and the effect of ram pressure on thrust, atmosphere, air density, barometer, standard day at sea level, height of atmosphere and temperature, mach number and laws governing, thrust specific fuel consumption, fuel air ratio, thermal efficiency, mechanical efficiency, weight per pound thrust.

JE-3. ENGINE NOMENCLATURE AND DISASSEMBLY PROCEDURES

Engine disassembly procedures, handling and storing parts, removal of intake-duct, accessories, exhaust system, compressor section, combustion section, cleaning of parts, tools of inspection, magnetic inspection, dye inspection, machine inspection forms and procedures.

JE-4. ENGINE CLEANING, INSPECTION AND REPAIRING

Disassembly, cleaning, inspection reassembly, test of accessories, inspection and test igniters, and systems, balance check turbine and compressor units, inspection and replacement of turbine "buckets."

JE-5. ENGINE COMPONENTS

Inspection and testing accessories, fuel control unit, fuel nozzles, fuel pumps, flow divider, fuel filters and heat exchangers.

JE-6. INSPECTION AND TESTING OF ACCESSORIES

Gas turbine engine components breakdown and study, air inlet duct design, variable geometrics duct, divergent supersonic duct, bellmouth divided-entrance duct, turboprop compressor inlets, compressor inlet screens, fan engine, primary and secondary airflow, compressors, design, types, metals, centrifugal, axial flow, twin spool axial flow, twin spool with fan, stators and diffusers, burner section, design, types, metals, can-type, can-annular-type, annular combustion chambers, design and function of the nozzle diaphragm, turbine, design, types, metals, single stage, multiple stage, turbine-bucket design, turbine-bucket attachments, shrouded and unshrouded turbine-buckets, turbine temperatures and "creep," exhaust ducts, design, types, metals, convention convergent exhaust duct, variable-area nozzle.

JE-7. THRUST REVERSERS AND SOUND SUPPRESSORS

Gas turbine systems, thrust reversers, design, types, clamshell mechanical-blockage type, aerodynamic-blockage type, engine noise-suppressors, design, type, corrugated-perimeter type, multitube type.

JE-8. TURBINE ENGINE FUEL SYSTEMS

Aircraft fuel system (DC-8) design, tanks, booster pumps, reservoir feed pumps, temperature limit switch, ground refueling system, fuel quantity indicating system, "dripsticks," remote electrical quantity indicators, totalizer, set knob, fuel temperature fuel dumping system and main tank standpipes.

Engine fuel system, design, operations, engine driven fuel booster, pump, fuel temperature regulator (fuel/oil and fuel/air type heat exchanger.) Fuel flowmeter transmitter, engine driven main fuel pump, fuel control unit, fuel control vapor vent valve, fuel pressurizing and dump valve, fuel drain can, fuel manifold and discharge nozzles, fuel pressure warning system.

JE-9. LUBRICANTS AND LUBRICATION SYSTEMS

Oil viscosities, pour point, flash point, index numbers materials for use with synthetic lubricants.

Oil specifications for use in turbojet engines, dry sump system, "hot tank" system, oil supply tank assembly, tank breather and vent system, oil pressure pump, oil filters, scavenge pumps, pressure regulating valve, oil cooler, oil cooler door control system, fuel/oil type heat exchanger, oil quantity.

Indication system, oil pressure indication system, oil pressure warning system, oil temperature indication system, constant speed drive "CSD" oil system.

JE-10. ELECTRICAL POWER SYSTEMS

A.C. generator, A.C. voltage regulator system, generator relay, current transformer, bus tie relay, A.C. load bus, external electrical power system, A.C. loadmeter, A.C. voltmeter, A.C. frequency meter.

Generator drive transmission, design, operation, purpose.

JE-11. ENGINE IGNITION, STARTERS AND THERMOCOUPLE SYSTEMS

Engine ignition system, ignition exciters, types, function, maintenance and inspection.

High tension leads (spark igniters), exhaust gas temperature (EGT) system, thermocouple, harness and leads, turbojet engine starter system, D. C. electric, air turbine, combustion starters.

JE-12. AIR AND ANTI-ICING SYSTEMS

Engine indicating system, exhaust pressure ratio (EPR), exhaust gas temperature (EGT), tachometer system, N1 and N2 compressor, fuel pressure, oil pressure, oil inlet temperature.

Liquid injection (water) design, operation, purpose, compressor-inlet injection, combustion-chamber injection, water pump, injection regulator, manifold and nozzles, automatic drain valves and anti-icing systems.

JE-13. ASSEMBLY PROCEDURES

Safety precautions, principles and methods, part replacement, sequence and torque values.

JE-14. ENGINE OPERATION AND TEST PROCEDURES

Ground safety precautions, requirements for jet engine operation, inspection of engine inlet before starting, starting procedures, runup and test procedures, shutdown procedures, engine limitation, instruments and instrument markings.

JE-15. ENGINE TROUBLE SHOOTING

"Starting problems", hot start, false start, engine fails to accelerate to idle, "operational problems", incorrect idle speed, N2 speed fluctuation, over temperature, erratic acceleration, compressor stall, flame out.

FE-1. FLIGHT ENGINEER GROUND SCHOOL COURSE* 160 Hours

Applicable Civil Air Regulations and Federal Aviation Regulations; aircraft and engine (piston and turbine) performance; performance and power computations; weight and balance; basic maintenance.

*This course is conducted by the Airframe and Powerplant Division and is part of the Airline Flight Officers Curriculum. See page 32.

FLIGHT

DIVISION

GENERAL INFORMATION

Introduction

The Embry-Riddle Flight Division conducts flying training and ground school to qualify individuals for the various Federal Aviation Agency (FAA) pilot ratings. Persons may begin flight training at any time, but ground school courses are offered in accordance with the trimester schedule given on page 1. These courses are of 7½ weeks duration and are conducted twice per trimester.

Embry-Riddle utilizes modern late model two-place 100 horsepower Cessna 150 airplanes and four-place 145 horsepower Cessna 172's (Skyhawks). These aircraft are scrupulously maintained and are equipped with up to date radio and electronic navigation devices. The Cessna 150's and 172's are used for the private, commercial and instrument pilot courses. Students accomplish multi-engine flight training in a light twin such as the Piper Apache or in heavier aircraft such as the Twin Beech D-18 or Douglas DC-3. Full time instructors give close personal attention to each student from the time of his initial orientation to the day he graduates regardless of the course in which he is enrolled.

In order to obtain one or more FAA pilot certificates, a student must pass a written examination, satisfy prescribed hours of flying experience and must demonstrate proficiency in executing certain flight maneuvers. The various pilot training curricula shown herein quote prices for the minimum flying hours required by FAA using 1964 Cessna's. If additional flying hours are needed to meet proficiency standards, this time is charged at the rate per hour indicated on page 44. When considering these rates, one should realize that the cost covers training administered according to adequate standards by a staff specifically organized for this purpose.

Admission

Students will be admitted to the various flight training courses who are high school graduates or equivalent and who are 17 years of age or older. Prior to starting flight training, a student must possess an FAA Class II physical examination medical certificate.

CURRICULA

PRIVATE PILOT CURRICULUM

FAA Private Pilot Certificate

8 Weeks

Subject No.	Subject	Type Training Hours				Type Cessna	ACFT Cessna	Price	
		Dual	Solo	Syn. Trainer	Oral	150	172	Per Hour	Total
FC 1	Primary Flight	20				x		$14.00	$280.00
			15			x		12.00	180.00
				5				7.50	37.50
					5*			5.00	25.00
AS 1	Air Science 1				75**				105.00
						Books and Supplies			32.50
			TOTAL (Hours)		120				$660.00

* Individual instruction

**Classroom instruction

COMMERCIAL PILOT CURRICULUM

FAA Commercial Pilot Certificate

16 Weeks

Subject No.	Subject	Type Training Hours				Type Cessna 150	ACFT Cessna 172	Price	
		Dual	Solo	Syn. Trainer	Oral			Per Hour	Total
FC 1	Primary Flight	40				x		$14.00	$ 560.00
2	& Advanced	5 (I)				x		16.00	80.00
3	Flight I and II	3 (N)				x		15.00	45.00
		2					x	18.00	36.00
		5 (1)					x	20.00	100.00
			98			x		12.00	1,176.00
			2 (N)			x		12.00	24.00
			5				x	15.00	75.00
				15				7.50	112.50
					12			5.00	60.00
AS 1	Air Science I & II				75				105.00
2					75				105.00
						Books and Supplies			32.50
		TOTAL (Hours)			337				$2,511.00

(I) — Instrument
(N) — Night

INSTRUMENT PILOT CURRICULUM

FAA Instrument Rating

8 Weeks

Subject No.	Subject	Type Training Hours					Type Cessna	ACFT Cessna	Price	
		Dual	Solo	Syn. Trainer		Oral	150	172	Per Hour	Total
FC 4 & 5	Instrument Flight I & II	20						x	$20.00	$400.00
				10					7.50	75.00
						4			5.00	20.00
AS 3	Air Science III (Instrument)					75				105.00
							Books and Supplies			32.00*
				TOTAL (Hours)		109				$632.00

*If books and supplies have been purchased for the private or commercial pilots course, this amount should not be included.

INSTRUCTOR PILOT CURRICULUM

FAA Flight Instructor Rating (Airplane & Instrument)

3 Weeks

Subject No.	Subject	Type Training Hours		Type Cessna	ACFT Cessna	Price	
		Dual	Oral	150	172	Per Hour	Total
FC 8	Flight Instructor I (Airplane)	20		x		$14.00	$280.00
			20			5.00	100.00
				Books and Supplies			15.00
							$395.00
FC 9	Flight Instructor II (Instrument)	10			x	$20.00	$200.00
			10			5.00	50.00
							$250.00

MULTI-ENGINE PILOT CURRICULUM

FAA Multi-Engine Rating

2 Weeks

Subject No.	Subject	Type Training Hours		Type ACFT Twin Beech			Price	
		Dual	Oral	Light Twin 300 HP	D-18 900 HP	DC-3* 2400 HP	Per Hour	Total
FC 6	Multi-Engine	10		x			$37.50	$375.00
	Flight I		5				5.00	25.00
								$400.00
			or					
		10			x		$50.00	$500.00
			5				5.00	25.00
								$525.00
			or					
		10				x	$85.00	$850.00
			10				5.00	50.00
								$900.00

*Includes DC-3 Type Rating

CURRICULA RECAPITULATION FLIGHT TRAINING PRICES

Type of Aircraft	Type Training			
	Solo	Dual	Dual Instrument	Dual ATR
Cessna 150 (1964 Model)	$12.00	$14.00	$16.00	
(1965 Model)	$13.00	$15.00	$17.00	
Cessna 172 (1964 Model)	$15.00	$18.00	$20.00	$23.00
(1965 Model)	$16.00	$19.00	$21.00	$24.00
Light Twin		$37.50	$39.50	$42.50
Twin Beech D-18		$50.00	$60.00	$63.00
Douglas DC-3		$85.00	$95.00	$98.00

INSTRUCTION IN PRIVATE AIRCRAFT

	Dual	Dual Instrument	Dual ATR
Single Engine	$ 6.50	$ 8.50	$11.50
Multi-Engine	$12.00	$14.00	$17.00

Oral Instruction (Individual) — $5.00 per hour
Tie down of private aircraft in scheduled training **no charge.**
Maintenance and inspection service available.
Location — TAMIAMI AIRPORT until April 21, 1965.
Ground school for private, commercial and instrument also available. Each phase completed in 7½ weeks. Fee $105.00 each phase. Ground school and link training conducted in the Aviation Building, 3240 N. W. 27th Avenue, Miami, Florida. After April 21, 1965, flight training and ground school will be conducted at the Embry-Riddle facility Daytona Beach Municipal Airport, Daytona Beach, Florida.
NOTE: Pilots and aircraft owners are encouraged to take any amount of training at any level in their own aircraft or in Embry-Riddle aircraft. Short courses while on vacation are encouraged.

COURSE DESCRIPTIONS
FLIGHT SCHOOL

FC-1 PRIMARY FLIGHT

Airplane documents; airworthiness records; airplane performance and operation; airplane loading, including fuel, oil and baggage capacities; airplane preflight check; use of radio for voice communications; preflight operations; starting; taxiing; takeoffs and accuracy landings; airport traffic patterns; forced landings (single-

engine airplanes only) and simulated emergencies; emergency operation of airplane equipment; use of radio aids to VFR navigation; basic instruments; precision maneuvers; right and left 720° power turns; maneuvering at minimum controllable airspeed; stalls from all normally anticipated flight attitudes; cross-country flight planning; cross-country flying; cross-country flying emergencies; short and soft field landings and takeoffs; slips to a landing.

FC-2 ADVANCED FLIGHT I

Review of subjects in FC-1 with the following additional subjects: gliding spirals above a point on the ground; shallow eights-on-pylons; steep eights-on-pylons; lazy eights and chandelles.

FC-3 ADVANCED FLIGHT II

Dual and supervised solo flight training in all of the subjects in FC-1 and FC-2 in preparation for the FAA Commercial Pilot flight test.

FC-4 INSTRUMENT FLIGHT I

Instrument flight planning; filing an instrument flight plan; aircraft performance, range and fuel requirements; required instrumentation and equipment and their proper use; straight and level flight on instruments; turns, climbs and descents; emergencies; stalls steep turns; recovery from unusual attitudes; engine-out procedures; radio navigation and approach procedures; use of radio for voice communication; instrument approach; missed approach procedures; compliance with ATC instructions and procedures.

FC-5 INSTRUMENT FLIGHT II

A continuation of instrument flight training in all subjects in FC-4 to include instrument flight at night.

FC-6 MULTI-ENGINE FLIGHT I

Mult-engine aircraft systems, loading and performance; preflight, takeoffs and landings, basic maneuvers; single engine operation; emergency procedures; flight and full consumption planning.

FC-7 MULTI-ENGINE FLIGHT II

Review of subjects in FC-6 with instrument flight training and night flying in multi-engine aircraft.

FC-8 FLIGHT INSTRUCTOR (AIRPLANE)

Oral instruction and practical exercises in the fundamentals of teaching as applied to flight instruction. A study of and practice in instruction procedures and the preparation of training courses. Practice in the explanation of the purpose of all prescribed flight maneuvers and how to execute them. Flight training in the method of demonstrating and teaching these maneuvers.

FC-9 FLIGHT INSTRUCTOR (INSTRUMENT)

Training in the technique of instruction as applied to instrument flying.

FC-10 FLIGHT TEST ENGINEERING I

Review of all air maneuvers; acrobatics; flight test procedures to include purpose, equipment, methods and technique, and report preparation. Planning, preparation and conduct of actual flight tests in such areas as stress and strain analysis, laminar flow at various angles of attack, performance under various conditions of density altitude, fuel consumption under various rpm and manifold pressure settings; cockpit and instrumentation configuration; design configuration versus purpose of aircraft.

FC-11 & FC-12 FLIGHT TEST ENGINEERING II & III

A continuation of FC-10.

GROUND SCHOOL

AS-1 AIR SCIENCE I — 75 Hours

Theory and facts of flight. General service and flight safety in practice. Air traffic control and communication procedures. Federal Aviation Agency regulations pertaining to the pilot. Aerial navigaton: Pilotage, dead reckoning, radio maps, charts, and instruments necessary for safe flight operations under various conditions. Meteorology: A study of weather affecting the safe operations of aircraft, fundamentals concerning weather phenomena, interpretations of weather data, including weather maps, teletype sequence reports and forecasts.

AS-2 AIR SCIENCE II — 75 Hours

Continuation and advanced study of the subjects in AS-1 in preparation for the FAA commercial pilot written examination.

AS-3 AIR SCIENCE III — 75 Hours

A study of the basic principles, dependability and use of flight instruments. Weather phenomena affecting flight operations. Navigation, including all radio enroute, and landing aids; enroute and terminal area charts. Instrument flight planning using FAA publications covering instrument flight rules, regulations and procedures in preparation for the FAA instrument pilot written examination.

AS-4 AIR SCIENCE IV 75 Hours

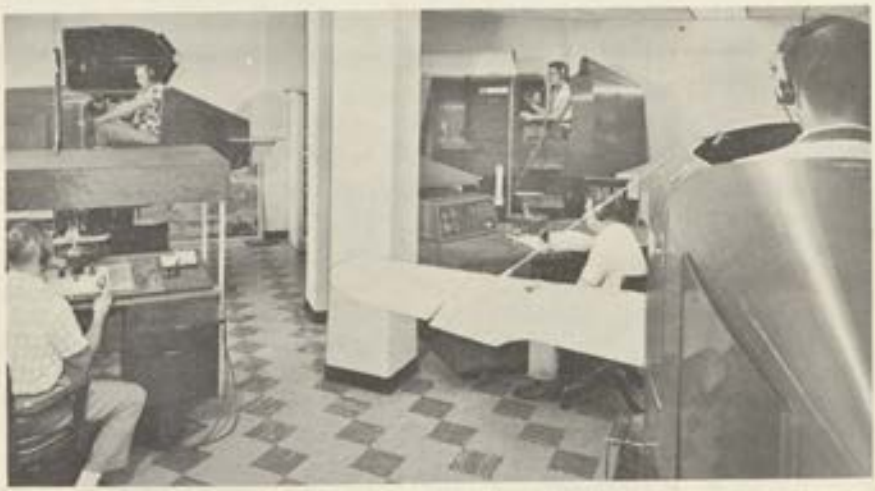
A study of FAA regulations relating to airline transport pilots and operations of air carrier aircraft; review of air navigation techniques during instrument flight; advanced meteorology; review of radio communication procedures; airborne radar; flight conditions and navigation at high altitude and supersonic speeds.

AS-5 FLIGHT SAFETY ENGINEERING 75 Hours

Flight physiology including the effects of altitude, gravity forces and fatigue. Accident prevention and flight safety programs; aircraft accident investigation.

AS-6 AIRLINE ADMINISTRATION AND OPERATION 75 Hours

Capabilities and limitations of air transportation; Federal, State and Local regulations and laws relating to air carrier operations; airlines world-wide and nation-wide; types of aircraft and purposes of each; organization and operating procedures of the airline industry; public relations; ticket sales; dispatch; scheduling; maintenance; auxiliary airborne equipment; auxiliary ground equipment; training; future trends.



Link Trainers prepare for basic instrument procedures

COMBINED AERONAUTICAL PROGRAMS

GENERAL INFORMATION

Introduction

Embry-Riddle Aeronautical Institute offers training programs which combine the subjects and facilities of the College Engineering and Engineering Technology, Airframe and Powerplant Division and Flight Division. These programs are designed to qualify men as:

Executive Pilots
Corporate Pilots
Airline Flight Officers
Aeronautical Engineer Pilots (Test Pilots)
Aircraft Maintenance Engineering Technicians

Awards

College degrees and FAA ratings awarded upon successful completion of these various programs are:

Executive Pilot — Associate Degree in Aeronautical Engineering Technology and FAA Commercial Pilot Certificate with Instrument and Multi-Engine Ratings.

Corporate Pilot — FAA Commercial Pilot Certificate with Instrument, Multi-Engine and Flight Instructor Ratings; FAA ATR Written Examination completed, FAA Airframe and Powerplant Mechanic Certificate; and Turbine Engine Technician Certificate.

Airline Flight Officer — Associate Degree in Aeronautical Engineering Technology; FAA Commercial Pilot Certificate with Instrument and Multi-Engine Ratings; FAA ATR and Flight Engineer Written Examination completed.

Aeronautical Engineer-Pilot — Baccalaureat Degree in Aeronautical Engineering; FAA Commercial Pilot Certificate with Instrument, Multi-Engine Ratings.

Aircraft Maintenance Engineering Technician — Associate or Baccalaureate Degree in Aircraft Maintenance Engineering Technology; FAA Airframe and Powerplant Mechanic Certificate.

CURRICULA

EXECUTIVE PILOT PROGRAM

An executive pilot is one whose primary occupation is management, administration or other activity at any level in a particular busness firm. His secondary duty is flying aircraft which are used to expedite the business. Embry-Riddle graduate executive pilots may be employed by any commercial firm, but are suited particularly for companies in the aerospace industry. The following curriculum is designed to qualify Embry-Riddle Executive Pilot graduates for preferential consideration in this field.

ASSOCIATE OF SCIENCE DEGREE CURRICULUM in AERONAUTICAL ENGINEERING TECHNOLOGY combined with COMMERCIAL PILOT CURRICULUM*

(Instrument and Multi-Engine Ratings)
7 Trimesters (15 Weeks Each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits	Total Hrs.
FIRST	HU-101	English Composition	2	0	2	
	MA-101	College Algebra	4	0	4	
	MA-102	Trigonometry and Analytical Geometry	5	0	5	
	**AS-1	Air Science I	5	0	0	75
	FC-1	Primary Flight				60
					11	
SECOND	HU-102	Technical Report Writing	2	0	2	
	MA-103	Differential Calculus	5	0	5	
	ME-101	Engineering Drawing I	0	6	2	
	PH-101	Physics I	4	3	5	
	**AS-2	Air Science II	5	0	0	75
	FC-2	Advanced Flight I				60
					14	

THIRD	HU-103	Psychology	2	0	2	
	MA-104	Integral Calculus	4	0	4	
	ME-102	Engineering Drawing II	0	6	2	
	ME-201	Statics	5	0	5	
	PH-102	Physics II	3	3	4	
	FC-3	Advanced Flight II				60
					17	
FOURTH	HU-202	Public Speaking	2	0	2	
	ME-202	Descriptive Geometry	0	6	2	
	ME-203	Dynamics	5	0	5	
	ME-204	Fluid Mechanics	3	0	3	
	**AS-3	Air Science III	5	0	0	75
	FC-4	Instrument Flight I				45
					12	
FIFTH	HU-203	Economics I	2	0	2	
	ME-205	Strength of Materials	5	0	5	
	ME-206	Thermodynamics	4	0	4	
	AE-201	Airframe Laboratory	0	2	1	
	AE-202	Aerodynamics I	5	0	5	
	FC-5	Instrument Flight II				45
					17	
SIXTH	AE-301	Aerodynamics II	5	0	5	
	AE-302	Wind Tunnel Laboratory	2	2	2	
	AE-303	Aircraft Structures I	5	0	5	
	AE-304	Principles of Aircraft Design	3	0	3	
	AE-305	Aircraft Drafting	0	6	2	
	AE-306	Aircraft Propulsion Systems Laboratory	0	2	1	
	FC-6	Multi-Engine Flight I				30
					18	
SEVENTH	HU-301	Business English	2	0	2	
	ME-301	Metallurgy and Materials Science	3	0	3	
	ME-302	Materials and Processes Laboratory	0	2	1	
	AE-307	Aircraft Structures II	5	0	5	
	AE-308	Aircraft Detail Design	0	6	3	
	AE-309	Airplane Design	0	6	3	

*Hours of flight training shown here and in other combined programs are a guide relative to the minimum time considered necessary for orderly progress in pilot qualification and experience. Therefore, these hours differ from the hours shown for corresponding subjects in the Flight Division curricula. Also, flight training hours will vary from one person to another depending on previous flying experience and ability of individual concerned.

**Included in the trimester tuition of $350.00, provided the engineering subject credits per trimester do not exceed a total of 13 in the first and fourth trimester and 14 in the second trimester.

CORPORATE PILOT PROGRAM

A Corporate Pilot is one whose profession is general aviation. This involves flying aircraft as a pilot or instructor; management of the operations of a fleet of aircraft; sales and service of aircraft and associated equipment; airport operations and management or any combination of the above. In order to obtain preferential consideration for any area of this diversified business one must be more than a qualified pilot or mechanic. The management of a fleet of aircraft, which is required of a chief pilot, requires direction and control of both flight operations and aircraft maintenance. Success in the establishment of one's own aviation business is insured if the owner is qualified in flying, maintenance, and management. The Embry-Riddle Corporate Pilot graduate is trained for this purpose.

COMMERCIAL PILOT CURRICULUM

(Instrument, Multi-Engine and Flight Instructor Ratings and FAA ATR Written Examination) combined with

AIRFRAME AND POWERPLANT MECHANIC CURRICULUM AND TURBINE ENGINE TECHNICIAN CURRICULUM

5 Trimesters (15 Weeks Each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits	Total Hrs.
FIRST	*AS-1	Air Science I				75
	FC-1	Primary Flight				45
	FC-2	Advanced Flight I				45
	SL-11	Basic Aircraft Science and Welding				225
	SL-12	Powerplant Science and Systems				225
SECOND	*AS-2	Air Science II				75
	*AS-3	Air Science III				75
	FC-3	Advanced Flight II				60
	SL-13	Aircraft and Systems				225
	SL-14	Electrical Laboratory				225
THIRD	*AS-4	Air Science IV				75
	FC-4&5	Instrument Flight I & II				90
	SL-15	Propellers & Accessory Overhaul				225
	SL-16	Engine Overhaul & Maintenance				225
FOURTH	*AS-5	Air Science V				75
	FC-6&7	Multi-Engine I & II				60
	SL-17	Aircraft Structures and Repairs				225
	SL-18	Aircraft Assembly Weight and Balance				225
FIFTH	FC-8&9	Flight Instructor I & II				30
	JE-1-15	Turbine Engine Overhaul and Maintenance				450

Requirements for award of the Embry-Riddle Corporate Pilot Diploma:

a. FAA Commercial Pilot Certificate (Instrument, Multi-Engine and Instructor Ratings)
b. Passing grade FAA ATR Written Examination
c. FAA Airframe and Powerplant Mechanic Certificate
d. Turbine Engine Technician Certificate

*Not included in the tuition for A & P courses.

AIRLINE FLIGHT OFFICER PROGRAM

Embry-Riddle offers a training program designed to qualify eligible young men for preferential consideration as an Airline Flight Officer. Graduates of this course will require comparatively little company training to be ready to assume duties on the flight deck of today's superairliners. Prerequisites for this program are graduation from high school and ability to pass a Class I physical examination.

ASSOCIATE OF SCIENCE DEGREE CURRICULUM
in
AERONAUTICAL ENGINEERING TECHNOLOGY
combined with
COMMERCIAL PILOT CURRICULUM
(Instrument and Multi-Engine Ratings and ATR Written Examination)
and
FLIGHT ENGINEERS CURRICULUM
(Ground School Only)

8 Trimesters (15 Weeks Each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits	Total Hrs.
FIRST	HU-101	English Composition	2	0	2	
	MA-101	College Algebra	4	0	4	
	MA-102	Trigonometry and Analytical Geometry	5	0	5	
	*AS-1	Air Science I	5	0	0	75
	FC-1	Primary Flight				60
					11	
SECOND	HU-102	Technical Report Writing	2	0	2	
	MA-103	Differential Calculus	5	0	5	
	ME-101	Engineering Drawing I	0	6	2	
	PH-101	Physics I	4	3	5	
	*AS-2	Air Science II	5	0	0	75
	FC-2	Advanced Flight I				60
					14	

THIRD	HU-103	Psychology	2	0	2	
	MA-104	Integral Calculus	4	0	4	
	ME-102	Engineering Drawing II	0	6	2	
	ME-201	Statics	5	0	5	
	PH-102	Physics II	3	3	4	
	FC-3	Advanced Flight II				60
					17	
FOURTH	HU-202	Public Speaking	2	0	2	
	ME-202	Descriptive Geometry	0	6	2	
	ME-203	Dynamics	5	0	5	
	ME-204	Fluid Mechanics	3	0	3	
	*AS-3	Air Science III	5	0	0	75
	FC-4	Instrument Flight I				45
					12	
FIFTH	HU-203	Economics I	2	0	2	
	ME-205	Strength of Materials	5	0	5	
	ME-206	Thermodynamics	4	0	4	
	AE-201	Airframe Laboratory	0	2	1	
	AE-202	Aerodynamics I	5	0	5	
	FC-5	Instrument Flight II				45
					17	
SIXTH	AE-301	Aerodynamics II	5	0	5	
	AE-302	Wind Tunnel Laboratory	2	2	2	
	AE-303	Aircraft Structures I	5	0	5	
	AE-304	Principles of Aircraft Design	3	0	3	
	AE-305	Aircraft Drafting	0	6	2	
	AE-306	Aircraft Propulsion Systems Laboratory	0	2	1	
	FC-6	Multi-Engine Flight I				30
					18	
SEVENTH	HU-301	Business English	2	0	2	
	ME-301	Metallurgy and Materials Science	3	0	3	
	ME-302	Materials and Processes Laboratory	0	2	1	
	AE-307	Aircraft Structures II	5	0	5	
	AE-308	Aircraft Detail Design	0	6	3	

	AE-309	Airplane Design	0	6	3	
	AE-310	Aircraft Systems Laboratory	0	2	1	
	FC-7	Multi-Engine Flight II				30
					18	

**EIGHTH	FE-1	Flight Engineer's Course	160
	AS-4	Air Science IV	75
	AS-5	Flight Safety Engineering	75
	AS-6	Airline Administration and Operation	75
	FC-10	Flight Test Engineering	30
Total Credits Required for AS Degree in AET			107

Requirements for award of the Embry-Riddle Airline Flight Officer Diploma:

a. AS Degree in AET or AMET, or better.
b. Commercial Pilot Certificate with Instrument, Multi-Engine Ratings.
c. Passing grade FAA ATR Written Examination and Flight Engineers Ground School Written Examination.
d. Successful completion of AS-105, 106 and FC-10.

*Included in the trimester tuition of $350.00, provided the credits for engineering subjects per trimester do not exceed a total of 13 in the first and fourth trimesters and 14 in the second trimester.

**The normal $350.00 tuition will cover all classroom subjects scheduled for this trimester.

AERONAUTICAL ENGINEER-PILOT PROGRAM

An aeronautical engineer who conducts flight tests of aircraft for purposes of establishing or confirming engineering data is a flight test engineer formerly known as test pilot. A successful flight test engineer must be well qualified in both engineering and flying ability.

As a member of an engineering team for the design and construction of new aircraft or modification of existing models, the flight test engineer must be familiar with if not participate in all phases of the project from design drawing to finished article construction. His major role, however, is the flight tests. This phase involves gathering of engineering data through actual flight performance and using the results gained to prove soundness of existing design or produce evidence for design modification.

The Embry-Riddle Aeronautical Engineer-Pilot Course, requiring three years and four months to complete, provides the successful graduate with the basic knowledge and skill to become both a test pilot and an executive pilot.

BACHELOR OF SCIENCE DEGREE CURRICULUM in AERONAUTICAL ENGINEERING combined with COMMERCIAL PILOT CURRICULUM

(Instrument and Multi-Engine Rating)

10 Trimesters (15 Weeks Each)

Trimester	Subject No.	Subject	Lecture	Lab	Credits	Total Hrs.
FIRST	HU-101	English Composition	2	0	2	
	MA-101	College Algebra	4	0	4	
	MA-102	Trigonometry and Analytic Geometry	5	0	5	
	AS-1	Air Science I	5	0	—	
	FC-1	Primary Flight				60
					11	
SECOND	HU-102	Technical Report Writing	2	0	2	
	MA-103	Differential Calculus	5	0	5	
	ME-101	Engineering Drawing I	0	6	2	
	PH-101	Physics I	4	3	5	
	AS-2	Air Science II	5	0	—	
	FC-2	Advanced Flight I				60
					14	
THIRD	HU-103	Psychology	2	0	2	
	MA-104	Integral Calculus	4	0	4	
	ME-102	Engineering Drawing II	0	6	2	
	ME-201	Statics	5	0	5	
	PH-102	Physics II	3	3	4	
	FC-3	Advanced Flight II				60
					17	

FOURTH	HU-202	Public Speaking	2	0	2	
	ME-202	Descriptive Geometry	0	6	2	
	ME-203	Dynamics	5	0	5	
	ME-204	Fluid Mechanics	3	0	3	
	AS-3	Air Science III	5	0	—	
	FC-4	Instrument Flight I				45
					—	
					12	
FIFTH	HU-203	Economics I	2	0	2	
	ME-206	Thermodynamics	4	0	4	
	ME-205	Strength of Materials	5	0	5	
	AE-201	Airframe Laboratory	0	2	1	
	AE-202	Aerodynamics	5	0	5	
	FC-5	Instrument Flight II				45
					—	
					17	
SIXTH	AE-301	Aerodynamics II	5	0	5	
	AE-302	Wind Tunnel Laboratory	2	2	2	
	AE-303	Aircraft Structures I	5	0	5	
	AE-304	Principles of Aircraft Design	3	0	3	
	AE-305	Aircraft Drafting	0	6	2	
	AE-306	Aircraft Propulsion Systems Laboratory	0	2	1	
	FC-6	Multi-Engine Flight I				30
					—	
					18	
SEVENTH	HU-301	Business English	2	0	2	
	ME-301	Metallurgy and Materials Science	3	0	3	
	ME-302	Materials & Processes Laboratory	0	2	1	
	AE-307	Aircraft Structures II	5	0	5	
	AE-308	Aircraft Detail Design	0	6	3	
	AE-309	Airplane Design	0	6	3	
	AE-310	Aircraft Systems Laboratory	0	2	1	
	FC-7	Multi-Engine Flight II				30
					—	
					18	

EIGHTH	HU-401	Economics II	3	0	3	
	HU-402	American History	3	0	3	
	MA-401	Differential Equations	3	0	3	
	ME-401	Heat Transfer	3	0	3	
	CH-201	Chemistry I	2	2	3	
	AE-401	Supersonic Aerodynamics I	3	0	3	
	FC-10	Test Flight I				30
					18	
NINTH	HU-403	World History	3	0	3	
	HU-404	Philosophy	3	0	3	
	ME-402	Mechanical Vibrations	3	0	3	
	CH-202	Chemistry II	2	2	3	
	EE-401	Electrical Engineering Principles	3	0	3	
	AE-402	Jet and Rocket Propulsion	3	0	3	
	FC-11	Test Flight II				30
					18	
TENTH	HU-501	Principles of Industrial Management	3	0	3	
	MA-402	Advanced Calculus	3	0	3	
	MA-403	Computer Programming	3	0	3	
	EE-501	Electronics for Engineers	2	2	3	
	AE-501	Supersonic Aerodynamics II	3	0	3	
	AE-502	Space Mechanics	3	0	3	
	FC-12	Test Flight III				30
					18	

Total Credits Required for BS Degree in AE 161

Requirements for award of the Embry-Riddle Aeronautical Engineer Pilot Diploma:

a. BS Degree in AE.

b. Commercial Pilot Certificate with Instrument and Multi-Engine Ratings.

c. Successful completion of Flight Courses 10, 11 and 12.

AIRCRAFT MAINTENANCE ENGINEERING TECHNOLOGY PROGRAMS

The purpose of these programs is to produce levels of qualification in the maintenance engineering field. Maintenance engineering technicians are needed to provide a necessary link between the mechanic who performs aircraft inspection, repair and overhaul and the engineer who designs aircraft. He must be a qualified airframe and powerplant mechanic and be conversant with the theory and methods of aircraft design and development. These programs also are conducted similar to the aeronautical engineering curriculum and include mechanic training. Upon successful completion the student is qualified to take the FAA examination for an airframe and powerplant mechanic license and he earns a degree in aircraft maintenance engineering technology.

BACHELOR OF SCIENCE DEGREE CURRICULUM
in
AIRCRAFT MAINTENANCE ENGINEERING TECHNOLOGY

11 Trimesters (15 Weeks Each. Four Trimesters in the Airframe and Powerplant mechanic School and 7 in the College of Engineering and Engineering Technology.)

Trimester	Subject No.	Subject	Lecture	Lab	Credits	Total Hrs.
FIRST	SL-11	Basic Aircraft Science and Welding				225
	SL-12	Powerplant Science and Systems				225
SECOND	SL-13	Aircraft Systems				225
	SL-14	Electrical Laboratory				225
THIRD	SL-15	Propellers and Accessory Overhaul				225
	SL-16	Engine Overhaul and Maintenance				225
FOURTH	SL-17	Aircraft Structures and Repairs				225
	SL-18	Aircraft Assembly & Weight and Balance				225
FIFTH	HU-101	English Composition	2	0	2	
	MA-101	College Algebra	4	0	4	
	MA-102	Trigonometry and Analytic Geometry	5	0	5	
	ME-101	Engineering Drawing I	0	6	2	
	PH-101	Physics I	4	3	5	
					18	
SIXTH	HU-102	Technical Report Writing	2	0	2	
	MA-103	Differential Calculus	5	0	5	
	ME-102	Engineering Drawing II	0	6	2	
	ME-201	Statics	5	0	5	
	PH-102	Physics II	3	3	4	
					18	

SEVENTH	HU-103	Psychology	2	0	2
	MA-104	Integral Calculus	4	0	4
	ME-202	Descriptive Geometry	0	6	2
	ME-203	Dynamics	5	0	5
	ME-204	Fluid Mechanics	3	0	3
					16
EIGHTH	HU-202	Public Speaking	2	0	2
	HU-203	Economics I	2	0	2
	ME-205	Strength of Materials	5	0	5
	ME-206	Thermodynamics	4	0	4
	AE-202	Aerodynamics I	5	0	5
					18
NINTH	AE-301	Aerodynamics II	5	0	5
	AE-304	Principles of Aircraft Design	3	0	3
	AE-305	Aircraft Drafting	0	6	2
		Technical Elective	—	—	8
					18
TENTH	HU-301	Business English	2	0	2
	HU-401	Economics II	3	0	3
	HU-402	American History	3	0	3
	ME-301	Metallurgy and Materials Science	3	0	3
	CH-201	Chemistry I	2	2	3
		Technical Elective	—	—	3
					17
ELEVENTH	HU-403	World History	3	0	3
	HU-404	Philosophy	3	0	3
	CH-202	Chemistry II	2	2	3
	EE-401	Electrical Engineering Principles	3	0	3
		Technical Elective	—	—	6
					18

MINIMUM CREDITS FOR GRADUATION 123

Plus successful completion of all subjects in the Airframe and Powerplant Mechanic Course.

ASSOCIATE OF SCIENCE DEGREE CURRICULUM
in
AIRCRAFT MAINTENANCE ENGINEERING TECHNOLOGY

9 Trimesters (15 Weeks Each) (Four Trimesters in the Airframe and Powerplant Mechanic School and 5 in the College of Engineering and Engineering Technology.)

Trimester	Subject No.	Subject	Lecture	Lab	Credits	Total Hrs.
FIRST	SL-11	Basic Aircraft Science and Welding				225
	SL-12	Powerplant Science and Systems				225
SECOND	SL-13	Aircraft Systems				225
	SL-14	Electrical Laboratory				225
THIRD	SL-15	Propellers and Accessory Overhaul				225
	SL-16	Engine Overhaul and Maintenance				225
FOURTH	SL-17	Aircraft Structures and Repairs				225
	SL-18	Aircraft Assembly and Weight and Balance				225
FIFTH	HU-101	English Composition	2	0	2	
	MA-101	College Algebra	4	0	4	
	MA-102	Trigonometry and Analytic Geometry	5	0	5	
	ME-101	Engineering Drawing I	0	6	2	
	PH-101	Physics I	4	3	5	
					18	
SIXTH	HU-102	Technical Report Writing	2	0	2	
	MA-103	Differential Calculus	5	0	5	
	ME-102	Engineering Drawing II	0	6	2	
	ME-201	Statics	5	0	5	
	PH-102	Physics II	3	3	4	
					18	

SEVENTH	HU-201	Psychology	2	0	2
	MA-104	Integral Calculus	4	0	4
	ME-202	Descriptive Geometry	0	6	2
	ME-203	Dynamics	5	0	5
	ME-204	Fluid Mechanics	3	0	3
					16
EIGHTH	HU-202	Public Speaking	2	0	2
	HU-203	Economics I	2	0	2
	ME-205	Strength of Materials	5	0	5
	ME-206	Thermodynamics	4	0	4
	AE-202	Aerodynamics I	5	0	5
					18
NINTH	HU-301	Business English	2	0	2
	AE-305	Aircraft Drafting	0	6	2
		Technical Elective	—	—	10
		Humanities Elective	—	—	4
					18

MINIMUM CREDITS FOR GRADUATION 88

Plus successful completion of all subjects in the Airframe and Powerplant Mechanics Course.

FACULTY
COLLEGE OF ENGINEERING AND ENGINEERING TECHNOLOGY

Forrest, Frank G. ..... Dean of Engineering
B. S. United States Military Academy, 1939. Commercial Pilot (Airplane and Helicopter).

White, Jack J. ..... Administrative Assistant to Dean of Engineering, Intructor in Chemistry.
B. S. in Mathematics, University of Miami, 1949.
B. A. in Physics, University of Miami, 1952.

Biondo, Joseph W. ..... Chairman, Academic Board; Instructor in Mechanics.
B. S. in Aircraft Maintenance Engineering Technology, Embry-Riddle Aeronautical Institute, 1961.
A. S. in Aeronautical Engineering Technology, Embry-Riddle Aeronautical Institute, 1959.

Breese, Edward Y. ..... Chairman, Curriculum and Policy Committee; Instructor in Humanities.
B. A. in History, Princeton University, 1934.

Lowery, Reginald ..... Instructor in Aeronautical Design
B. S. in Aeronautical Engineering, Virginia Polytechnic Institute, 1952.

McCarthy, Olive ..... Instructor in Mathematics
B. A. in Mathematics, Carleton College, 1917.

Miller, Ralph B. ..... Instructor in Aerodynamics
B. A. in Mechanical Engineering, Stanford University, 1926.
M. E. in Aeronautical Engineering, Stanford University, 1933.

Sumrall, Joseph N. ..... Instructor in Mathematics and Humanities

Traut, William A. ..... Instructor in Physics, Thermodynamics and Heat Transfer
B. S. in Mechanical Engineering, Ilmenau Technical College, 1923.

FACULTY
AIRFRAME AND POWERPLANT DIVISION

Davidson, Leonard P. ..... Director
A & P Mechanic FAA Certificate No. 1247741
Commercial Pilot, Ground Instructor, FAA
Designated Mechanic Examiner.

Bolton, Williard J. ..... Instructor, Powerplants and Science Systems
A & P Mechanic FAA Certificate No. 532441
Ground Instructor, Commercial Pilot.

Calkins, Delos ..... Instructor, Electrical Laboratory
BSEE, MSEE Cornell University 1939
A & P Mechanic FAA Certificate No.
1543417, Private Pilot.

Cornwell, Odbert ..... Instructor, Powerplants and Science Systems
A & P Mechanic FAA Certificate No. 1240196
Comercial Pilot.

Johnson, Alfred ..... Instructor, Aircraft Systems
A & P Mechanic FAA Certificate No. 11712
Commercial Pilot, Ground Instructor FAA
Designated Mechanic Examiner.

Lehmann, Karl ..... Instructor, Basic Aircraft Science and Welding
A & P Mechanic FAA Certificate No. 12079
Ground Instructor, FAA Designated
Mechanic Examiner.

Smith, Joseph H. ..... Instructor, Aircraft Structures, Weight and Balance.
A & P Mechanic FAA Certificate No. 1360306
Private Pilot, FAA Designated Mechanic
Examiner.

Titus, Chandler P. ..... Instructor, Propellers and Accessories, Engines
A & P Mechanic FAA Certificate No. 1277549
Ground Instructor, FAA Designated A & P
Mechanic Examiner.

Wooten, Paul ..... Instructor, Aircraft Structures, Weight and Balance
A & P Mechanic FAA Certificate No. 1581983
Teacher's Certificate, State of Florida.

FACULTY
FLIGHT DIVISION

Tacker, Agee C. ..... (Acting) Director, Flight Division
Commercial Pilot, ASMEL, Instrument
FAA Certificate No. 1258276
Flight Instructor, Airplane and Instrument.

Carrington, Daniel ..... Flight Instructor
Commercial Pilot, ASEL, Instrument
FAA Certificate No. 1420065
Flight Instructor, Airplanes.

D'Arcy, John ..... Flight Instructor
Commercial Pilot, ASMEL, Instrument
FAA Certificate No. 1465550
Flight Instructor, Airplane and Instrument.

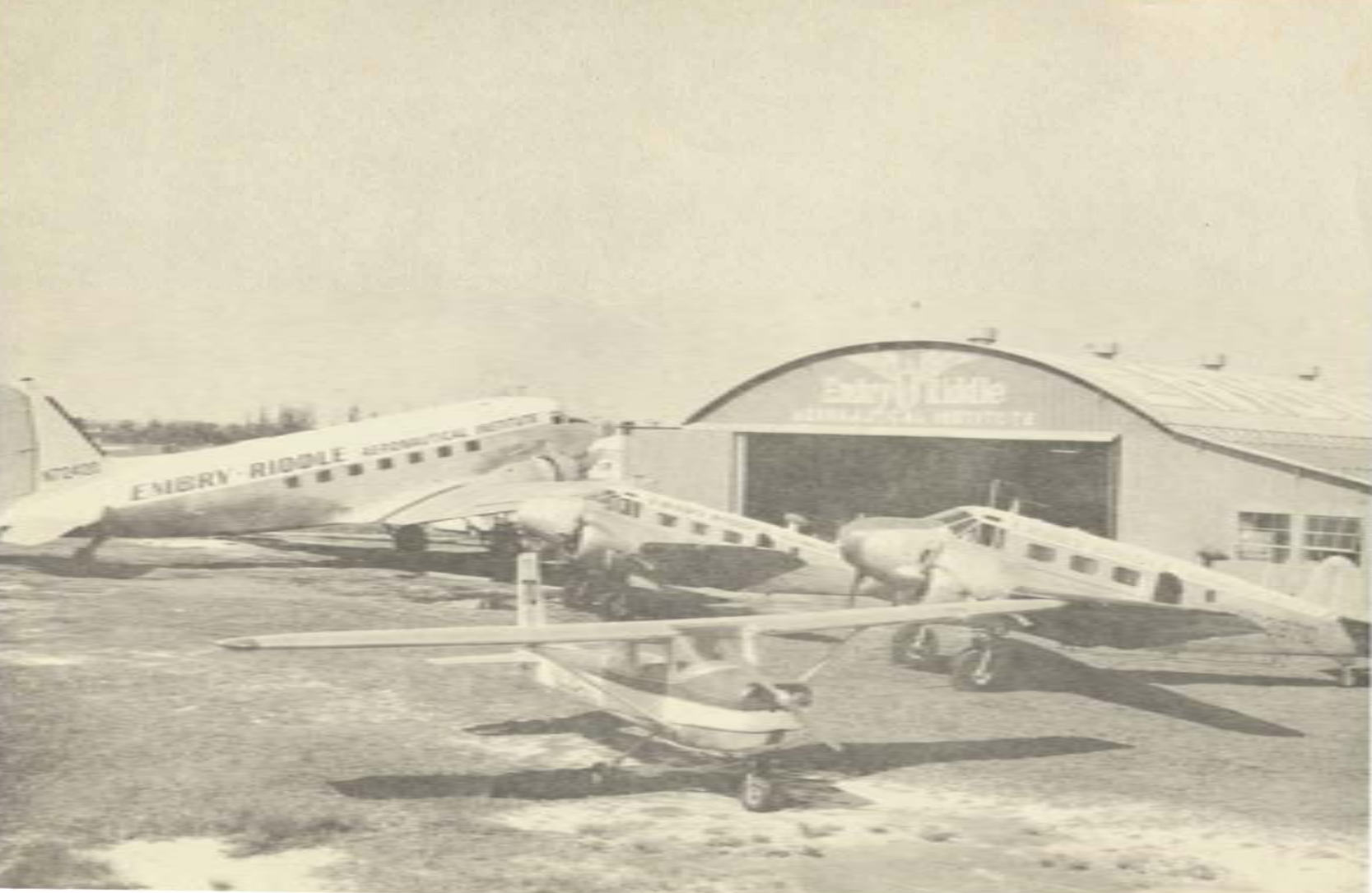
Delagarde, Richard ..... Flight Instructor
Commercial Pilot, ASMEL, Instrument
FAA Certificate No. 1415324
Flight Instructor, Airplane and Instrument.

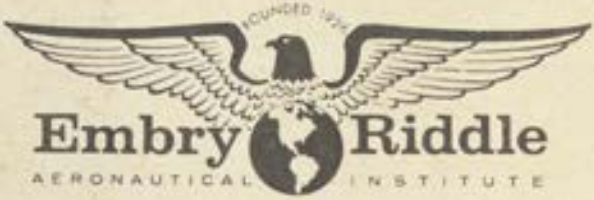
Hubbell, Richard ..... Flight Instructor
Commercial Pilot, ASMEL, Instrument
FAA Certificate No. 1536436
Flight Instructor, Airplane and Instrument.

Ward, Mike ..... Flight Instructor
Commercial Pilot, ASMEL, Instrument
FAA Certificate No. 1476215
Flight Instructor, Airplane and Instrument.

Aument, John G. ..... Instructor, Ground School
Ground Instructor
FAA Certificate No. 1379026

Campbell, William R. ..... Instructor, Ground School
Ground Instructor
FAA Certificate No. 1442852


EMBRY-RIDDLE



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