

AERONAUTICS (AET)

AET107 / Private Pilot Ground School

5 Credits / 5.0 Periods for Lecture

Ground school in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate written examination. Includes aerodynamics, airplane systems, airports, airspace, communications, Federal Air Regulations, navigation, airplane performance, flight planning, and flight physiology. Requires passing a written exam similar to the FAA Private Pilot written exam. Prerequisites: None. Corequisites: AET110 or AET112.

Division: Aviation and Applied Technology

AET107HH / Private Pilot Ground School: Helicopter

5 Credits / 5.0 Periods for Lecture

Ground school in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate written examination. Includes aerodynamics, helicopter systems, airports, airspace, communications, Federal Air Regulations, navigation, helicopter performance, flight planning, and flight physiology. Requires passing a written exam similar to the FAA Private Pilot written exam. Prerequisites: None. Corequisites: AET110HH.

Division: Aviation and Applied Technology

AET110 / Private Pilot Flight

1 Credit / 5.0 Periods for Laboratory

Flight course in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate practical examination. Includes preflight preparation and planning, ground operations, airport operations, departures, navigation, basic instrument flight, night flight, slow flight, ground reference maneuvers, emergency operations, and arrivals. Approximately 50 hours airplane flight experience at student's expense required. Requires passing check ride similar to the FAA Private Pilot check ride. Prerequisites: None. Corequisites: AET107.

Division: Aviation and Applied Technology

AET110HH / Private Pilot Flight: Helicopter

2 Credits / 5.0 Periods for Laboratory

Flight course in preparation for the Federal Aviation Administration (FAA) Private Pilot Certificate practical examination. Includes preflight preparation, preflight procedures, airport and heliport operations, hovering maneuvers, takeoffs, landings, and go-rounds, performance maneuvers, navigation, emergency operations, night operations, and post-flight procedures. Approximately 75-85 hours helicopter flight experience at student's expense required. Requires passing check ride similar to the FAA Private Pilot check ride. Prerequisites: None. Corequisites: AET107HH.

Division: Aviation and Applied Technology

AET112 / Private Pilot Flight-Test Course

1 Credit / 5.0 Periods for Laboratory

Flight course in preparation for transition into continued AET course work. Includes preflight preparation and planning, ground operations, airport operations, departures, navigation, basic instrument flight, slow flight, ground reference maneuvers, emergency operations, and arrivals. Requires passing check ride similar to the Federal Aviation Administration Private Pilot check ride. Prerequisites: FAA Private Pilot Airplane Single-Engine Land or advanced certification. Corequisites: AET107. Course Notes: Flight and ground briefing time at student's expense required.

Division: Aviation and Applied Technology

AET115 / Aviation Meteorology

3 Credits / 3.0 Periods for Lecture

Meteorology for professional pilots. Includes atmosphere, air mass circulation, cloud type identification, weather hazards, and high altitude, Arctic, and tropical weather systems. Basic forecasting, use of Direct User Access Terminal (DUAT) systems and reading and interpreting weather charts. Prerequisites: None.

Division: Aviation and Applied Technology

AET203 / Basic Airplane Systems

3 Credits / 3.0 Periods for Lecture

Beginning commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examination. Discussions will include, but not be limited to reciprocating engines, engine systems, airplane systems, altitude systems, and commercial regulations. Prerequisites: A grade of C or better in (AET207, AET217, and AET210) or permission of Instructor. Corequisites: AET222.

Division: Aviation and Applied Technology

AET203HH / Basic Helicopter Systems

2 Credits / 2.0 Periods for Lecture

Beginning commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examination. Discussions will include, but not be limited to reciprocating engines, engine systems, helicopter systems, altitude systems, and commercial regulations. Prerequisites: A grade of C or better in AET207HH, AET217HH, and AET210HH. Corequisites: AET220HH and AET203HH.

Division: Aviation and Applied Technology

AET205 / Aircraft Structures, Systems, and Maintenance

4 Credits / 4.0 Periods for Lecture

Survey of air frame structures, systems, and maintenance regulations for pilots. Includes aircraft and airfoil design and construction, and electrical, instrumentation, and automatic flight control systems. Maintenance privileges and limitations, and forms and records. Prerequisites: Private Pilot Certificate or permission of Instructor.

Division: Aviation and Applied Technology

AET207 / Attitude Instruments and Navigation

3 Credits / 3.0 Periods for Lecture

Beginning instrument pilot ground course in preparation for the Federal Aviation Administration (FAA) Instrument Pilot Rating and Instrument Rating written examinations. Includes preflight preparation, flight instruments, basic attitude instrument flying, radio navigation systems, and technically advanced aircraft systems. Prerequisites: A grade of C or better in AET110 or permission of Instructor. Corequisites: AET210, AET217, and AET220.

Division: Aviation and Applied Technology

AET207HH / Attitude Instruments and Navigation: Helicopter

2 Credits / 2.0 Periods for Lecture

Beginning instrument pilot ground course in preparation for the Federal Aviation Administration (FAA) Instrument Pilot Rating and Instrument rating written examinations. Includes preflight preparation, flight instruments, basic attitude instrument flying, radio navigation systems, and technically advanced helicopter systems. Prerequisites: A grade of C or better in AET110HH or permission of Instructor. Corequisites: AET210HH and AET217HH.

Division: Aviation and Applied Technology

AET208 / Aviation Safety**3 Credits / 3.0 Periods for Lecture**

Introduction to aviation safety, including aviation safety programs, risk management, pilot psychology, physiology, human factors, and accident review and investigation. Prerequisites: A grade of C or better in AET107, or permission of Instructor.

Division: Aviation and Applied Technology

AET210 / Commercial Flight Lab I**1 Credit / 5.0 Periods for Laboratory**

Initial flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot practical examination. Emphasis on instrument and technically advanced aircraft operations. Student must fly approximately 10 hours at own expense. Requires passing operational stage checks similar to the FAA check rides. Prerequisites: A grade of C or better in AET110 or permission of Instructor. Corequisites: AET207, AET217, and AET220.

Division: Aviation and Applied Technology

AET210HH / Instrument Flight: Helicopter**2 Credits / 5.0 Periods for Laboratory**

Initial helicopter flight course in preparation for the Federal Aviation Administration (FAA) Instrument rating practical examination. Emphasis on helicopter instrument operations. Student must fly approximately 75 hours at own expense. Requires passing operational phase checks. Prerequisites: A grade of C or better in AET110HH or permission of Instructor. Corequisites: AET207HH and AET217HH.

Division: Aviation and Applied Technology

AET213 / Aerodynamics and Performance**3 Credits / 3.0 Periods for Lecture**

Advanced commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examinations. Includes discussion of aerodynamic factors including lift, weight, drag, and thrust. Discussions will include, but are not limited to aerodynamics, performance, safe and efficient airplane operations, airplane stability and control, stalls, and spins. Prerequisites: A grade of C or better in AET207, AET217, and AET210. Corequisites: AET221.

Division: Aviation and Applied Technology

AET213HH / Aerodynamics and Performance: Helicopter**2 Credits / 2.0 Periods for Lecture**

Advance commercial pilot ground course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot Certificate and Commercial written examinations. Includes discussion of aerodynamic factors including lift, weight, drag, and thrust. Discussions will include, but are not limited to aerodynamics, performance, and safe and efficient helicopter operations. Prerequisites: A grade of C or better in AET207HH, AET217HH, and AET210HH. Corequisites: AET220HH and AET203HH.

Division: Aviation and Applied Technology

AET215 / Aircraft Powerplants**4 Credits / 4.0 Periods for Lecture**

Survey of engines and engine systems for pilots. Includes theory and analysis of reciprocating and turbine aircraft engines. Lubrication, ignition, fuel control, cooling, exhaust, and propellers. Prerequisites: A grade of C or better in AET205 or permission of Instructor.

Division: Aviation and Applied Technology

AET217 / Instrument Procedures**3 Credits / 3.0 Periods for Lecture**

Advanced instrument pilot ground school course in preparation for the Federal Aviation Administration (FAA) Instrument pilot rating and Instrument rating written examinations. Includes Federal Aviation Regulations, instrument approach procedures, and instrument en route considerations. Requires passing written exam similar to the Instrument pilot rating and Instrument rating written exams. Prerequisites: A grade of C or better in AET110 or permission of Instructor. Corequisites: AET207, AET210, and AET220.

Division: Aviation and Applied Technology

AET217HH / Instrument Procedures: Helicopter**2 Credits / 2.0 Periods for Lecture**

Advance helicopter instrument pilot ground school course in preparation for the Federal Aviation Administration (FAA) Instrument pilot rating and Instrument rating written examinations. Includes Federal Aviation Regulations, instrument approach procedures, and instrument en route considerations. Requires passing written exams similar to the Instrument pilot rating and Instrument rating written exams. Prerequisites: A grade of C or better in AET110HH or permission of Instructor. Corequisites: AET210HH and AET217HH.

Division: Aviation and Applied Technology

AET220 / Instrument Flight Lab**1 Credit / 5.0 Periods for Laboratory**

Flight course in preparation for the Federal Aviation Administration (FAA) Instrument rating practical examination. Emphasis on instrument operations. Student must fly approximately 40 hours at own expense. Requires passing of stage checks similar to the FAA check ride. Prerequisites: A grade of C or better in AET110 or permission of Instructor. Corequisites: AET207, AET210, and AET217.

Division: Aviation and Applied Technology

AET220HH / Commercial Flight: Helicopter**2 Credits / 5.0 Periods for Laboratory**

Advanced flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot practical examination. Emphasis on commercial and high performance helicopter operations. Student must fly approximately 60 hours at own expense. Requires passing instrument rating and commercial pilot stage checks similar to the FAA check rides. Prerequisites: A grade of C or better in AET210HH, AET207HH and AET217HH. Corequisites: AET203HH and AET213HH.

Division: Aviation and Applied Technology

AET221 / Commercial Flight Lab II**1 Credit / 5.0 Periods for Laboratory**

Intermediate flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot practical examination. Emphasis on commercial and solo cross-country flight operations. Student must fly approximately 45 hours at their own expense. Maneuvers and procedures during dual instruction are designed to be performed with flight instructor guidance. Requires passing commercial pilot stage checks similar to the FAA check ride. Prerequisites: A grade of C or better in AET207 and AET210 or permission of Instructor. Corequisites: AET213.

Division: Aviation and Applied Technology

AET222 / Commercial Flight Lab III**1 Credit / 5.0 Periods for Laboratory**

Advanced flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot practical examination. Emphasis on commercial operations. Student must fly approximately 45 hours at their own expense. Maneuvers and procedures are designed to be performed with little flight instructor guidance. Requires commercial pilot stage checks similar to the FAA check ride. Prerequisites: A grade of C or better in AET221 and AET213. Corequisites: AET203.

Division: Aviation and Applied Technology

AET225 / Advanced Aircraft Systems**4 Credits / 4.0 Periods for Lecture**

Survey of advanced aircraft systems to include electrical, automatic flight control, pressurization, cabin atmosphere, ice control, rain control, fire detection and extinguishing. Includes theory and analysis of turbine aircraft engines. Introduction to turbine engine systems to include lubrication, ignition, fuel control, cooling, exhaust, and propellers. Includes overview of maintenance publications, forms and records. Prerequisites: Private Pilot Certificate or permission of Instructor.

Division: Aviation and Applied Technology

AET227 / Certified Flight Instructor: Airplane, Single Engine Land Ground School**5 Credits / 5.0 Periods for Lecture**

Ground school in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor and Fundamentals of Instruction written examinations. Includes fundamentals of instruction, aerodynamics, airplane performance, systems, operations, weight and balance, weather, federal regulations, navigation, maneuvers, pilot physiology, ethics, and aeronautical decision making. Requires passing written exams similar to the FAA Certified Flight Instructor: Airplane, and Fundamentals of Instruction written exams. Prerequisites: A grade of C or better in AET240 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET230.

Division: Aviation and Applied Technology

AET227HH / Certified Flight Instructor: Helicopter Ground School**4 Credits / 4.0 Periods for Lecture**

Ground school in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor and Fundamentals of Instruction written examinations. Includes fundamentals of instruction, aerodynamics, helicopter performance, systems, operations, weight and balance, weather, federal regulations, navigation, maneuvers, pilot physiology, ethics, and aeronautical decision making. Requires passing written exams similar to the FAA Certified Flight Instructor: Helicopter, and Fundamentals of Instruction written exams. Prerequisites: FAA Commercial Pilot Certificate. Corequisites: AET230HH.

Division: Aviation and Applied Technology

AET229 / Crew Resource Management**3 Credits / 3.0 Periods for Lecture**

Crew communications, teamwork, leadership, "followership," decision-making, and situational awareness; also the benefits of diversity, and the role diversity plays in the modern aerospace industry. Emphasis on utilization of all available resources in order to conduct a safe and efficient flight. Prerequisites: A grade of C or better in AET217, or permission of instructor.

Division: Aviation and Applied Technology

AET230 / Certified Flight Instructor: Airplane, Single Engine Land Flight Lab**1 Credit / 3.0 Periods for Laboratory**

Flight course in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor: Airplane practical examination. Emphasis on demonstration and analysis of flight maneuvers. Includes preflight, ground operations, airport operations, takeoffs, climbs, flight fundamentals, stalls, spins, slow flight, basic instrument operations, performance maneuvers, ground reference maneuvers, emergency operations, approaches, landings, and postflight procedures. Requires approximately 25 hours of flight that includes high performance operations at student's expense. Also requires passing check ride similar to the FAA Certified Flight Instructor check ride. Prerequisites: A grade of C or better in AET240 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET227.

Division: Aviation and Applied Technology

AET230HH / Certified Flight Instructor: Helicopter**1 Credit / 3.0 Periods for Laboratory**

Flight course in preparation for the Federal Aviation Administration (FAA) Certified Flight Instructor: Helicopter practical examination. Emphasis on demonstration and analysis of flight maneuvers. Includes preflight procedures, airport and heliport operations, hovering maneuvers, takeoffs, landings, and go-arounds, fundamentals of flight, performance maneuvers, emergency operations, special operations, and postflight procedures. Requires approximately 60 hours of flight at student's expense. Also requires passing check ride similar to the FAA Certified Flight Instructor check ride. Prerequisites: FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET227HH.

Division: Aviation and Applied Technology

AET237 / Multiengine Airplane Pilot Ground School**2 Credits / 2.0 Periods for Lecture**

Aeronautical knowledge necessary to meet requirements for a multi-engine airplane rating including orientation, aerodynamics, airplane systems, airplane performance, flight planning, and emergency procedures. Prerequisites: A grade of C or better in AET220 or FAA Commercial Pilot Certificate with instrument rating. Corequisites: AET240.

Division: Aviation and Applied Technology

AET239 / Commercial Flight Lab IV**1 Credit / 5.0 Periods for Laboratory**

Final flight course in preparation for the Federal Aviation Administration (FAA) Commercial Pilot practical examination. Emphasis on commercial operations. Student must fly approximately 20 hours at their own expense. Maneuvers and procedures are designed to be performed without flight instructor guidance. Requires passing commercial pilot stage check similar to the FAA check ride. Prerequisites: A grade of C or better in (AET203 and AET222), or permission of Instructor.

Division: Aviation and Applied Technology

AET240 / Multiengine Airplane Pilot Flight Lab**1 Credit / 1.5 Periods for Laboratory**

Flight course in preparation for the Federal Aviation Administration (FAA) Multi-engine Airplane practical examination. Approximately 18 hours of flight experience at the student's expense and passing check ride similar to the FAA Multi-engine check ride are required. Prerequisites: A grade of C or better in AET239 or FAA Commercial Pilot Certificate with Single Engine Land and Instrument rating. Corequisites: AET237.

Division: Aviation and Applied Technology

AET257 / Readings In Aviation

3 Credits / 4.0 Periods for Lecture & Lab

Critical inquiry of a particular aviation theme from a wide variety of sources. Structured to provide an atmosphere of individualized research and study paralleled by professional expertise and guidance. International data communication facilities and equipment made available for student use. Prerequisites: A grade of C or better in ENG102 or ENG111 and permission of Instructor.

Division: Aviation and Applied Technology

AET258 / Certified Flight Instructor: Instrument Airplane Ground School

3 Credits / 3.0 Periods for Lecture

Aeronautical knowledge and practical teaching ability necessary to obtain an Instrument Flight Instructor Certificate with an Airplane-Single-Engine rating and necessary to satisfactorily pass the Flight Instructor Instrument knowledge test. Prerequisites: Valid FAA Commercial Pilot Certificate or Airline Transport Pilot Certificate with the appropriate category and class of airplane used in the course, instrument rating, and Flight Instructor Certificate-Airplane. Corequisites: AET270.

Division: Aviation and Applied Technology

AET258HH / Certified Flight Instructor: Instrument Helicopter, Ground School

3 Credits / 3.0 Periods for Lecture

Aeronautical knowledge and practical teaching ability necessary to obtain an Instrument Flight Instructor Certificate with a Helicopter rating and necessary to satisfactorily pass the Helicopter Flight Instructor Instrument knowledge test. Prerequisites: Valid FAA Commercial Pilot Certificate or Airline Transport Pilot Certificate with instrument rating and the appropriate category and class of helicopter used and Flight Instructor Certificate-Helicopter. Corequisites: AET270HH.

Division: Aviation and Applied Technology

AET270 / Certified Flight Instructor: Instrument Airplane Flight Lab

1 Credit / 3.0 Periods for Laboratory

Flight experience in an airplane to meet flight proficiency and aeronautical experience requirements necessary to add an Instrument Airplane Rating to an existing Flight Instructor-Airplane certificate. Prerequisites: Valid FAA Commercial Pilot Certificate or Airline Transport Pilot Certificate with the appropriate category and class of airplane used in the course, instrument rating, and Flight Instructor Certificate-Airplane. Corequisites: AET258.

Division: Aviation and Applied Technology

AET270HH / Certified Flight Instructor: Instrument Helicopter Lab

1 Credit / 3.0 Periods for Laboratory

Flight experience in a helicopter designed to provide flight proficiency and aeronautical experience requirements necessary to pursue adding an Instrument Helicopter Rating to an existing Flight Instructor-Helicopter certificate. Prerequisites: Valid FAA Commercial Pilot Certificate, or Airline Transport Pilot Certificate with instrument rating and the appropriate category and class of helicopter used; and Flight Instructor Certificate-Helicopter. Corequisites: AET258HH.

Division: Aviation and Applied Technology

AET290 / Flight Physiology

3 Credits / 3.0 Periods for Lecture

In-depth study of aeromedical factors for pilots. The causes, symptoms, prevention, and treatment of flight environment disorders, altitude effects, spatial disorientation, visual illusions, body heat imbalance, and psychological factors are included as they relate to pilot performance and survival. Two altitude chamber flights at the student's expense are required. Prerequisites: Current FAA (Federal Aviation Administration) medical certificate.

Division: Aviation and Applied Technology