

Course Descriptions

Aviation Technology (AV)

See Department of Engineering and Technology Education, [click here](#)

AV 1100	The Aviation Profession	1
Covers attributes of aviation professional, career planning, and certification process. (F,Sp)		
AV 1130	Flight Principles	2
Basic flight theory and physics of flight. Aircraft control systems related to flight. Ground handling and servicing of aircraft. Special lab fee. (F) ^{DE}		
AV 1140	Aircraft Components and Principles	2
Materials and hardware, as well as nondestructive inspection applicable to aircraft. Plumbing methods, maintenance publications, and aircraft weight and balance control. (F)		
AV 1170	Aircraft Structures	3
Accepted methods and repair for metal structures. Organic finishes and application techniques with laboratory applications and practical experience. (F)		
AV 1240	Aircraft Maintenance	3
Maintenance, repair, alteration, and inspection of aircraft. Assembly and rigging of control systems with laboratory application of maintenance assembly and rigging procedures. Prerequisites: AV 1130, 1140. (Sp)		
AV 2100	Aircraft Reciprocating Powerplants and Accessories	3
Theory of operation, maintenance, and repair of reciprocating engines, propellers, exhaust systems, ignition systems, and fuel systems with laboratory applications of principles and components studied. Prerequisite: AV 2110 (must be taken concurrently). (F)		
AV 2110	Aircraft Reciprocating Powerplants and Accessories Lab	3
Laboratory application of principles studied in AV 2100. Prerequisite: AV 2100 (must be taken concurrently). (F)		
AV 2140	Aircraft Turbine Powerplants and Maintenance Operations	3
Theory of turbine powerplants, including turbine engine and components operation, hot section inspection, and servicing. Aircraft engine 100-hour inspections and maintenance, with laboratory applications of principles and components studied. Prerequisite: AV 2150 (must be taken concurrently). (Sp)		
AV 2150	Aircraft Turbine Powerplant Maintenance Operations Lab	3
Theory of turbine powerplants, including turbine engine and components operation, hot section inspection, and servicing. Aircraft engine 100-hour inspections and maintenance, with laboratory applications of principles and components studied. Prerequisite: AV 2140 (must be taken concurrently). (Sp)		
AV 2170	Aircraft Systems	2
Theory and operation of aerospace environmental systems, communication, navigation and guidance systems, fuel and propellant systems, fire detection, and warning. (Sp)		
AV 2180	Aircraft Hydraulic and Pneumatic Systems	2
Theory and operation of aircraft hydraulic, landing gear, and brake systems. (F)		
AV 2190	Aircraft Systems Lab	1
Laboratory application of principles and components studied in AV 2170. Prerequisite: AV 2170 (must be taken concurrently). (Sp)		
AV 2200	Aircraft Hydraulics and Pneumatics Systems Lab	1
Laboratory application of principles and components studied in AV 2180. Prerequisite: AV 2180 (must be taken concurrently). (F)		
AV 2250	Internship	1-4[®]
Planned supervised work experience in industry. Must have departmental approval. (F,Sp,Su)		

AV 2330	Private Pilot Ground School	4
Instructions in principles of flight, aircraft and engine operation, weather, navigation, radio aids to navigation, radio communications, and federal air regulations. Preparation for FAA Private Pilot written exam. (F,Sp,Su)		
AV 2350	Private Pilot Certification	1
FAA approved flight training program meeting all requirements for, and in the issuance of, the Private Pilot Airplane License. Prerequisite: AV 2330 (may be taken concurrently). (F,Sp,Su)		
AV 2420	FAA Regulations, Records, and Certification	2
Maintenance forms, records, and regulations releasing aircraft to airworthy status. Certification of maintenance technicians is also included. (Sp)		
AV 2430	Aircraft Electrical Systems and Components	2
Aircraft electrical power generating systems. Theory of generation, alternators, regulation, and control systems with laboratory application of principles and systems studied. Prerequisite: ETE 2300. (Sp)		
AV 2440	Aircraft Electrical Systems Laboratory	2
Laboratory application of principles and systems studied in AV 2430. Prerequisites: ETE 2300; AV 2430 (must be taken concurrently). (Sp)		
AV 2510	Intermediate Flight	1
FAA approved flight training program that fulfills the cross country requirements for commercial and instrument ratings. Prerequisite: AV 2350. (F,Sp,Su)		
AV 2520	Instrument Pilot Ground School	4
Ground school approved by FAA under Part 141 of the Federal Aviation Regulations. Designed to prepare students to pass the FAA oral and written examinations required for becoming instrument rated pilots. Prerequisite: AV 2330. (F,Sp)		
AV 2540	Instrument Pilot Certification I	1
FAA approved flight training program introducing requirements for issuance of the Instrument Pilot Airplane Rating. Prerequisites: AV 2350, 2510; and AV 2520 (may be taken concurrently). (F,Sp,Su)		
AV 2550	Instrument Pilot Certification II	1
Continuation of AV 2540. Completes all requirements for issuance of the instrument pilot airplane rating. Prerequisite: AV 2540. (F,Sp,Su)		
AV 2620	Commercial Pilot Ground School	2
Commercial flight operations including performance, cross country planning, advanced systems operations, complex airplanes, and flight maneuvers. Prerequisites: AV 2350, 2520, 2540, and 2550. (F,Sp)		
AV 2660	Commercial Pilot Certification	1
Flight instruction to meet FAA requirements and completion of tests for certification. Prerequisites: AV 2540, 2550; and AV 2620 (may be taken concurrently). (F,Sp,Su)		
AV 2720	CFI and CFII Ground School	3
Designed to prepare students to pass the FAA oral and written examinations required for becoming certified flight and instrument instructors. Combines Certified Flight Instructor and Certified Flight Instructor-Instrument into one course. Prerequisites: AV 2620, 2660. (F,Sp)		
AV 2740	CFI Certification	1
FAA-approved flight training program meeting all requirements for the issuance of the Certified Flight Instructor Airplane Rating. Prerequisites: AV 2620, 2660; and AV 2720 (may be taken concurrently). (F,Sp,Su)		
AV 2860	CFII Certification	1
FAA approved flight training program meeting all the requirements for, and issuance of, the Certified Flight Instructor, Airplane Instrument Rating. Prerequisites: AV 2620, 2660, 2720, and 2740. (F,Sp,Su)		
AV 2880	Multi-Engine Certification	1
Flight training program designed to satisfy all requirements necessary to qualify a student for the FAA Multi-Engine Airplane Rating practical test. Prerequisite: AV 2660. (F,Sp,Su)		

Course Descriptions

AV 3010 National Airspace, Air Traffic Control, and Airport Administration 3

Study of air traffic control system, airspace usage, and facilities. Airport planning, development, and management and their importance to the achievement of a successful airport operation. Management of publicly owned and operated airports, ranging in size from general aviation to the large air carrier hubs. Prerequisites: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. (F)

AV 3120 Aviation Law 3

Law as it affects aviation industry. Rights and responsibilities of individual organizations and the aviation community. Regulation and liability pertaining to design, manufacturing, operation, and maintenance of aircraft. Prerequisites: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. (F)

AV 3140 Advanced Avionics Systems and Flight Simulation 3

Advanced instrument simulation training. Prerequisites: AV 1100, 2540, and passing scores on the Computer and Information Literacy (CIL) exams. (F,Sp,Su)

AV 3280 Advanced Turbine Engines 2

Advanced study of turbo-jet propulsion. Comparative examination of jet, fan, turbo-prop, and turbo-shaft engines. Prerequisites: AV 1100, 2150, and passing scores on the Computer and Information Literacy (CIL) exams. (F)

AV 3410 FCC License 1

Prepares students to obtain the FCC General Radio Telephone Operator's License. Covers electronic fundamentals through microwave radar and FCC rules and regulations. Prerequisite: ETE 3400. (Sp)

AV 3610 AeroTechnology Design I 1

Students select and plan a senior project. Requires written proposal, including technical description of the project and management plans. Prerequisites: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. (Sp)

AV 4200 Composite Manufacturing Processes and Repair (dual listing 6200) 3

Composite manufacturing processes, composite materials survey, tooling design and fabrication, autoclave processes, vacuum bag techniques, filament winding processes, equipment requirements, materials cutting and storage, and composite materials testing. Prerequisites: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. (Sp)

AV 4250 Internship 1-6[®]

Planned supervised work experience in industry. Prerequisite: Departmental approval. (F,Sp,Su)

AV 4280 Airline Management 3

Study of airline operations and their organizational structure. Examines functions of airline dispatcher, operations specialists, managers, and cockpit flight crew. Discussion of advanced flight planning, aircraft performance and loading considerations, and impact of weather on flight operations and routing priorities. Prerequisites: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. (F)

AV 4300 Airline Marketing 3

Introduces marketing thought, basic marketing principles and their application to airline business and operations, strategic planning, and decision-making. Prerequisites: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. AV 4280 is *highly recommended*. (Sp)

AV 4480 Certified Flight Instructor Practicum 2

Under supervision of ground school instructor, students gain practical experience teaching ground school subjects. Prerequisite: AV 2740.

AV 4490 Human Factors in Aviation Safety 3

Examines major causative agent in aircraft accidents: the human being. Emphasizes psychological and physiological factors enhancing accident probability. Includes detailed analysis of ergonomics (human engineering) and its influence on safety. Prerequisites: AV 1100 and passing scores on the Computer and Information Literacy (CIL) exams. (Sp)

AV 4610 CI AeroTechnology Design II 3

Execution and completion of a team or individual project. Requires design reviews and written reports. Prerequisites: AV 1100, 3610, and passing scores on the Computer and Information Literacy (CIL) exams. (F)

AV 4620 CI AeroTechnology Design III 3

Preparation and presentation of a team or individual project. Writing and speaking skills emphasized through technical reports and presentations. Prerequisites: AV 1100, 4610, and passing scores on the Computer and Information Literacy (CIL) exams. (Sp)

AV 4660 CI Flight Senior Project 3

Students select, plan, and execute an approved senior project. Writing and speaking skills emphasized through technical reports and presentations. Prerequisites: AV 1100, 5400, and passing scores on the Computer and Information Literacy (CIL) exams. (F,Sp)

AV 5400 Regional Jet Ground School I 4

Introduction to a typical commercial jet aircraft in use by Regional Airlines. Course includes the following: Aircraft Systems, Standard Operating Procedures, and Flight Planning and Performance. Introduction to Airline Flight Operations in preparation for entry-level pilot positions with a regional airline. Prerequisites: AV 1100, 2550, and passing scores on the Computer and Information Literacy (CIL) exams. (Sp)

AV 5410 Regional Jet Ground School II 4

Continuation of AV 5400. Prerequisites: AV 1100, 5400, and passing scores on the Computer and Information Literacy (CIL) exams. (F)

AV 5420 Advanced Regional Jet Simulation 3

Flight training introduction to a typical commercial jet aircraft simulator in use by regional airlines. Intended for Professional Pilot aviation students actively pursuing a career in the airline industry. Prerequisites: AV 1100, 5410, and passing scores on the Computer and Information Literacy (CIL) exams. (F,Sp)

AV 6200 Composite Manufacturing Processes and Repair (dual listing 4200) 3

Composite manufacturing processes, composite materials survey, tooling design and fabrication, autoclave processes, vacuum bag techniques, filament winding processes, equipment requirements, materials cutting and storage, and composite materials testing. (Sp)

[®] Repeatable for credit. Check with major department for limitations on number of credits that can be counted for graduation.

[®] This course may be available through Regional Campuses and Distance Education (RCDE), and may be offered through multiple delivery methods. Current RCDE offerings may be viewed at: <http://distance.usu.edu/>