



Faculty

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Departmental Office: Flight Center; (707) 965-6219

Degrees and Programs

Aviation, B.S.	49
Aviation, A.S.	50
Aviation, Minor	50

The *Aviation Program* prepares students for positions as private and commercial pilots, mission and medical pilots, and others. Training includes theory, ground and flight instruction leading to pilot certificates and ratings from Private Pilot through Commercial Pilot and Flight Instructor.

Students transferring into the aviation program with previously earned FAA certificates or ratings should apply to the Aviation Program director for course credit *at the time of initial registration*. Course credit for FAA certificates or ratings earned earlier at other locations is not available and will not be awarded after the student has begun aviation courses at Pacific Union College. A copy of FAA certificates must be presented to the departmental representative at the Flight Center. Grades issued in recognition of FAA certificate validations are recorded as “S” (Satisfactory). For complete aviation policies and procedures, consult the *Flight Policies and Procedures Handbook*, available at the Flight Center. For financial information about flight training, see the section entitled “Financial Information” in this catalog.

Additional Fees:

Aviation students should expect and plan for approximately \$10,000 per year in airplane rental fees. They are advised to identify themselves to the Student Financial Services Office as aviation students to explore the possibility of financial assistance with this expense.

Major in Aviation, B.S.

A minimum of 68 hours (33 upper-division hours)

► Required Core Courses (60 hours):

AVIA 141	Applied Electronics	3
AVIA 172	Electronics and Fuel Systems	2
AVIA 173	Meteorology	3
AVIA 175	Private Pilot Theory	4
AVIA 176	Private Flight Training	2
AVIA 177	Intermediate Private Flight Training	2
AVIA 178	Advanced Private Flight Training	2
AVIA 275	Instrument Pilot Theory	4
AVIA 276	Instrument Flight Training	3
AVIA 278	Advanced Instrument Flight Training	4
AVIA 305	Aircraft Systems	4
AVIA 375	Commercial and CFI Theory	4
AVIA 376	Commercial Flight Training	2
AVIA 377	Intermediate Commercial Flight Training	2
AVIA 378	Advanced Commercial Flight Training	2
AVIA 379	Aerodynamics	2
AVIA 460	Professional Skills for Pilots	2
AVIA 468	Beginning Flight Instructor Flight Training	3
AVIA 469	Advanced Flight Instructor Flight Training	3
AVIA 470	Fundamentals of Flight Instruction	1
AVIA 476	Add-on Class Rating	2
AVIA 477	Human Factors in Aviation	2
AVIA 478	Add-on CFI Rating	2

► Required Core Electives (8 hours):

<i>At least 8 hours from the following:</i>		8
AVIA 273	Practicum in Flight (1-6)	
AVIA 350	Mission Flying Theory and Practice (2)	
AVIA 450	Advanced Aircraft Systems (2)	
AVIA 472	Instrument Instructor Flight Training (3)	
AVIA 473	Advanced Practicum in Flight (1-6)	

Recommended Minor:

A minor in Business Administration is recommended.

Aviation

Recommended Courses:

For students with a given interest, the following courses are recommended:

Mission Aviation:

ANTH 124, AVIA 350, COMM 330, EMER 101, PREL 337, RELH 311, RELP 235, 319, SOWK 121

Commercial Aviation:

AVIA 450, COMM 223, 330, ECON 261, 332, MGMT 261, 361, 465

Recommended Field Experience:

It is recommended that all students majoring in Aviation should have completed, by the end of winter quarter of their senior year, 500 hours of flight time.

The objective of this program is to prepare graduates for such positions in the aviation industry as the following: Mission pilots, company pilots, medical evacuation, teaching positions, pipeline patrol, border patrol, police, pilot training, forestry, fishing industry, air taxi operator, accident investigation, FAA specialist, major airline pilot, commuter airline pilot, cargo operations (FEDEX, UPS), fixed-base operator, traffic controller, and airport manager.

Major in Aviation, A.S.

A minimum of 42 hours

► Required Core Courses (42 hours):

AVIA 172	Electronics and Fuel Systems	2
AVIA 173	Meteorology	3

AVIA 175	Private Pilot Theory	4
AVIA 176	Private Flight Training	2
AVIA 177	Intermediate Private Flight Training	2
AVIA 178	Advanced Private Flight Training	2
AVIA 275	Instrument Pilot Theory	4
AVIA 276	Instrument Flight Training	3
AVIA 278	Advanced Instrument Flight Training	4
AVIA 305	Aircraft Systems	4
AVIA 376	Commercial Flight Training	2
AVIA 377	Intermediate Commercial Flight Training	2
AVIA 378	Advanced Commercial Flight Training	2
AVIA 379	Aerodynamics	2
AVIA 476	Add-on Class Rating	2
AVIA 477	Human Factors in Aviation	2

Minor in Aviation

A minimum of 24 hours (6 upper-division hours)

► Required Core Courses (10 hours):

AVIA 175	Private Pilot Theory	4
AVIA 176	Private Flight Training	2
AVIA 177	Intermediate Private Flight Training	2
AVIA 178	Advanced Private Flight Training	2

► Required Electives (14 hours):

Take at least 14 hours from the following: 14
Additional AVIA courses, selected in consultation with the advisor. Include at least 6 upper-division hours.

Aviation

SERVICE COURSE:

(Not applicable to a major or minor in this department)

AVIA 101

1 F, W, S

Introduction to Flight

An introduction to the elements and science of flight. Flight instruction on basic maneuvers of flight and landings. Survey of aircraft types, design considerations, and role applications. Brief history of aviation and its safety programs.

LOWER-DIVISION COURSES:

AVIA 141

3 W

Applied Electronics

A non-mathematical approach to electronics. Electronic components and component combinations to make useful equipment. Experiments include building and testing burglar alarms, photo strobes, power supplies, light dimmers, intercom systems, electronic doorbells, timers, clocks, and other circuits. For the general student. Two lectures and one three-hour laboratory per week. Odd years. *Previously ELEC 141.*

AVIA 172

2 W

Electronics and Fuel Systems

The components of the charging system, electrical storage, and starting systems. Battery-driven ignition systems, magnetos, engine combustion principles, and diagnosis of failures. Wiring, fuses, bus bar and grounding systems. Fuel systems section covers storage, fuel formulation, pumping, carburation, and electronic and mechanical fuel injection and turbo charging. Even years.

AVIA 173 **3 F**
Meteorology

An introduction to the causes of weather phenomena and patterns. Meteorological theory, the best ways to obtain current weather reports and forecasts, how to interpret meteorological reports, how to predict changes in weather, how to recognize dangerous weather patterns, and how to react to difficult situations caused by adverse weather. For both pilots and nonpilots. Recommended corequisite: AVIA 175.

AVIA 175 **4 F, S**
Private Pilot Theory

The theory necessary for safe flight in today's environment. Includes aerodynamics, the airspace system, aircraft performance and design, basic weather, maps, navigation, and aeromedical factors. Prepares the future private pilot for the FAA private pilot written exam. Corequisite: AVIA 176.

AVIA 176 **2 Su, F, W, S**
Private Flight Training

Covers all flight training up through solo flight. Includes training in preflight, taxi, take-off, flight maneuvers, stalls, emergency procedures, normal and cross-wind landings, federal regulations, traffic procedures, and communications. Qualifies for IP grading.*

AVIA 177 **2 Su, F, W, S**
Intermediate Private Flight Training

Includes several hours of solo practice including take-offs, air maneuvers, and landings. Special training in short-field and soft-field take-offs and landings, emergency procedures, slips, diversions, and cross-country flying techniques with a certificated flight instructor. Prerequisite: AVIA 176. Qualifies for IP grading.*

AVIA 178 **2 Su, F, W, S**
Advanced Private Flight Training

Flight with reference to instruments, night flying, VOR navigation, filing flight plans, pilotage, dead reckoning, and preparation for the FAA Private Pilot oral and practical exam. Prerequisite: AVIA 177. Qualifies for IP grading.*

AVIA 273 **1-6 Su, F, W, S**
Practicum in Flight

Practice in cross-country flying as pilot-in-command to various destinations. Practice with cockpit management skills, aeronautical decision making, and pre-flight planning. Prerequisite: AVIA 178. Repeatable to a maximum of 6 credits. Qualifies for IP grading.*

AVIA 275 **4 W**
Instrument Pilot Theory

From basic attitude instrument flying to getting around in the modern airspace system on an IFR flight plan. Preparation for the FAA instrument written examination and the instrument instructor written examination. Prerequisite: AVIA 175.

AVIA 276 **3 Su, F, W, S**
Instrument Flight Training

Basic attitude instrument flying theory and skills. Developing proficiency in scan of the attitude instruments, interpretation of the instruments, and control of the aircraft with an additional work load that includes such factors as communications, copying clearances, using a timing device, and reading charts in flight. Also includes VOR and ADF navigation, DME arcs, and holding patterns of all types. Prerequisite or corequisite: AVIA 175, 176, 177, 178. Qualifies for IP grading.*

AVIA 278 **4 Su, F, W, S**
Advanced Instrument Flight Training

Flight training includes precision and non-precision instrument approaches,

cross-country instrument flying, and flight and ground preparation for the FAA Instrument Rating oral and practical exam. Prerequisite: AVIA 276. Qualifies for IP grading.*

UPPER-DIVISION COURSES:

AVIA 305 **4 F**
Aircraft Systems

Major aircraft systems on both small and large aircraft, including theory and troubleshooting techniques. Includes engine theory, propellers, governors, hydraulics, pneumatics, anti-ice and de-ice systems, pressurization, flight controls and landing gear. Special emphasis on turbine engine theory and systems for transition to large transport category aircraft. Prerequisite: AVIA 175. Even years.

AVIA 350 **2 S**
Mission Flying Theory and Practice

Advanced mountain flying, operations at small unimproved airports, high altitude operations, and advanced short field landing techniques. Prerequisite: AVIA 476. Qualifies for IP grading.* Odd years.

AVIA 375 **4 W, S**
Commercial and Certificated Flight Instructor Theory

Aircraft performance, weight and balance, theory of flight, the federal airspace system, air traffic control, and navigation. Prepares pilots for the Commercial Pilot-Airplane and Flight Instructor-Airplane FAA written exams. Prerequisites: AVIA 175, 275. Offered during winter quarter in odd years and during spring quarter in even years.

* IP grades in AVIA courses must be completed within one quarter.

Aviation

AVIA 376 **2 Su, F, W, S** **Commercial Flight Training**

Aircraft systems, performance, and procedures necessary for safely operating a multi-engine aircraft. Prerequisite: AVIA 278. Qualifies for IP grading.*

AVIA 377 **2 Su, F, W, S** **Intermediate Commercial Flight Training**

Become proficient in the maneuvers and skills required for the Private Multi-engine practical exam. Special emphasis on in-flight emergencies. Prerequisite: AVIA 376. Qualifies for IP grading.*

AVIA 378 **2 Su, F, W, S** **Advanced Commercial Flight Training**

A comprehensive review of aeronautical knowledge and flight maneuvers in preparation for the Commercial Pilot-Airplane oral and practical exam. Prerequisite: AVIA 377. Qualifies for IP grading.*

AVIA 379 **2 W** **Aerodynamics**

Aerodynamics and aerodynamic devices used on various types of modern aircraft. Encompasses the basic concepts of flight as well as more advanced studies than a pilot would normally receive in preparation for pilot certificates. Recommended prior to commercial and flight instructor flight classes. Prerequisite: AVIA 175. Even years.

AVIA 450 **2 S** **Advanced Aircraft Systems**

Transport aircraft systems specializing in the CRJ, automatic flight controls, auxiliary power units, environmental control systems, and high altitude operations. Prerequisite: AVIA 305. Odd years.

AVIA 460 **2 W** **Professional Skills for Pilots**

Essential elements of being an aviation professional. Emphasizes professional etiquette, résumé writing, business writing, interviews, job search, time management, and organizational skills. Prerequisite: AVIA 378. Odd years.

AVIA 468+469 **3+3 Su, F, W, S** **Flight Instructor Flight Training**

Flight training and practice teaching in preparation for flight-instructor certificate. Requires perfecting teaching techniques for the flight instructor. Includes comprehensive review of private and commercial aeronautical knowledge; flight maneuvering skill from the right-hand seat. Awareness of obligations and privileges of a certificated flight instructor. Mastery of FAA documentation and certification procedures. Prerequisites: AVIA 378. Must be taken in sequence. Qualifies for IP grading.*

AVIA 470 **1 S** **Fundamentals of Flight Instruction**

Basic principles of education that may be applied to flight instruction. Practice ground instruction covering various private and commercial maneuvers. Discussion of the best teaching techniques and how to avoid pitfalls common to many students and flight instructors during flight training. Required for instructor certification. Prerequisite: AVIA 278. Even years.

AVIA 472 **3 Su, F, W, S** **Instrument Instructor Flight Training**

Preparation for the instrument flight instructor oral and practical examination. Review of skills and procedures required for instrument rating. Develops instrument flight proficiency from the right-hand seat and instructional skills necessary for teaching an instrument student in flight and on the ground. Prerequisites: AVIA 469. Qualifies for IP grading.*

AVIA 473 **1-6 Su, F, W, S** **Advanced Practicum in Flight**

Additional involvement in instruction or advanced flight operations. Advanced flight operations include night operations, IFR operations, and Class B operations. Special reports or research projects may be required in conjunction with these assignments. Prerequisite: AVIA 273. Repeatable to a maximum of 6 credits. Qualifies for IP grading.*

AVIA 476 **2 Su, F, W, S** **Add-on Class Rating**

Instruction in aircraft systems, maneuvers, and emergency procedures toward developing proficiency in an added class rating. Prepare students for the Add-on Class Rating oral and practical exam. Prerequisites: AVIA 378. Qualifies for IP grading.*

AVIA 477 **2 S** **Human Factors in Aviation**

The pilot's thought processes enabling detection and prevention of potentially hazardous aeronautical decision-making. Emergency procedure planning and crew resource management are role-played to promote teamwork and redundancy for multi-crew cockpits. Odd years.

AVIA 478 **2 Su, F, W, S** **Add-on CFI Rating**

Prepares the applicant to meet the experience requirements for an add-on to the instructor certificate. Review of private and commercial pilot aeronautical knowledge and flight skills in preparation for the Flight Instructor Add-on oral and practical exam. Prerequisite: AVIA 469. Qualifies for IP grading.*

* IP grades in AVIA courses must be completed within one quarter.