

# Aviation Operations

<b>Award Type</b>	<b>Units</b>
<b>Certificate of Performance:</b>	
Commercial Pilot	6
Flight Instructor	7
Helicopter Operations	9
Instrument Pilot	8–11
Private Pilot	6
Remote Pilot	8
Team Resource Management	9
<b>Certificate of Achievement:</b>	
Aviation Operations Management	18
Professional Piloting	18
<b>Associate of Science Degree:</b>	
Aviation Business Administration	27–30*
Professional Aeronautics	27–31*

\* and courses to meet graduation requirements, general education and electives as needed to meet the minimum of 60 units required for the degree.

## Program Description

The Aviation Operations Program integrates simulator flight training with rigorous academic study, providing a strong foundation for leadership positions within the aviation industry. The program emphasizes a combination of the technical fundamentals of flight, airport operations, human factors, group dynamics, and safety in order to enhance students' development of situational awareness, critical thinking, and problem solving skills. Miramar College's Aviation Operations Program meets all requirements of the Federal Aviation Administration's (FAA) Part 141 Pilot Ground School. Upon completion of the program, students are able to complete the FAA Airmen Knowledge Tests for multiple pilot certificates. Flexible course selection and multiple degree and certificate options are available to prepare the student for a variety of career paths in the aviation industry, including commercial pilot, airport management, unmanned systems, human factors, and many more.

## Credit for FAA Pilot Certificates

Pending Aviation Operations Program Director review and approval, students who already possess the associated FAA pilot certificate or rating may challenge up to two of the following courses:

- Private Pilot Ground School (AVIA 101)
- Instrument Ground School (AVIA 195)
- Commercial Pilot Ground School (AVIA 201)
- Flight Instructor Ground School (AVIA 211)

## Flight Training

Pending Aviation Operations Program Director review and approval, a student awarded a Miramar College Certificate of Performance for an academic phase of ground instruction (AVIA 101, 195, 201, 211) who subsequently earns the associated FAA certificate or rating can request that 3 units of credit be awarded for that flight training. As a result, it is possible for a student to earn up to 12 units at Miramar College for flight training.

## Program Learning Outcomes

Students who complete the Aviation Operations program will be able to:

- Demonstrate preparedness to complete, or continued preparation for, the respective Federal Aviation Administration written examination.
- Demonstrate the knowledge, skills, abilities, and experience for employment in an aviation-related career field.

## Career Options

The following is an abbreviated list of the myriad of career training options the Aviation Operations Program prepares its graduates to embark upon:

- Airline Management
- Airport Management
- Airport Security
- Air Traffic Control
- Border Patrol
- Commercial Airline Pilot
- Corporate Pilot
- Ag Pilot, Dispatcher
- Banner Towing
- Certificated Flight Instructor
- Airline Flight Operations
- Federal Aviation Administration
- Gate Agent
- Fixed Base Operator Management

- Flying Club Management
- Flight Attendant
- Flight Operations Supervisor
- Unmanned Aircraft Operations
- Transportation Security Administration

Some aviation-related career fields require study beyond the associate degree level. Students intending to transfer to a university in an aviation-related major should consider completing an associate degree in the Professional Aeronautics program.

Faculty	Office	Telephone/Email
Max Moore	F1-103H	619-388-7660 mmmooore@sdccd.edu

### Certificate of Performance: Commercial Pilot\*

Courses:	Units
AVIA 133 Human Factors in Aviation	3
AVIA 201 Commercial Pilot Ground School	3
<b>Total Units = 6</b>	

When passed with a "C" or better, indicates student qualification to take the FAA Commercial Pilot Knowledge Examination.

\*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

**Note:** This program is not eligible for federal financial aid in accordance with Federal regulations.

### Certificate of Performance: Flight Instructor\*

Courses:	Units
AVIA 133 Human Factors in Aviation	3
AVIA 211 Flight Instructor Ground School	3
AVIA 211L Basic Visual Flight Instructor Lab <b>or</b>	
AVIA 215L Basic Instrument Flight Instructor Lab	1
<b>Total Units = 7</b>	

When passed with a "C" or better, indicates student qualification to take the FAA Fundamentals of Instruction and the Certified Flight Instructor Knowledge Examination.

\*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

**Note:** This program is not eligible for federal financial aid in accordance with Federal regulations.

### Certificate of Performance: Helicopter Operations\*

The Certificate of Performance Helicopter Operations provides an introduction to helicopter operations and careers.

Courses:	Units
AVIA 101 Private Pilot Ground School	3
AVIA 133 Human Factors in Aviation	3
AVIA 151 Helicopter Ground School	3
<b>Total Units = 9</b>	

When passed with a "C" or better indicates student qualification to take the FAA Helicopter Private Pilot Knowledge Examination.

\*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

**Note:** This program is not eligible for federal financial aid in accordance with Federal regulations.

### Certificate of Performance: Instrument Pilot\*

Courses:	Units
AVIA 133 Human Factors in Aviation	3
AVIA 195 Instrument Ground School	3
AVIA 195L Basic Instrument Flight Lab	1
AVIA 196L Advanced Instrument Flight Lab	1
<b>Total Units = 8-11</b>	

When passed with a "C" or better, indicates student qualification to take the FAA Instrument Rating Knowledge Examination.

\*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

**Note:** This program is not eligible for federal financial aid in accordance with Federal regulations.

## Certificate of Performance: Private Pilot\*

Courses:		Units
AVIA 101	Private Pilot Ground School	3
AVIA 133	Human Factors in Aviation	3
<b>Total Units = 6</b>		

When passed with a "C" or better, indicates student qualification to take the FAA Private Pilot Knowledge Examination.

\*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

**Note:** This program is not eligible for federal financial aid in accordance with Federal regulations.

## Certificate of Performance: Remote Pilot\*

Courses:		Units
AVIA 101	Private Pilot Ground School	3
AVIA 101L	Private Pilot Flight Lab	1
AVIA 161	Remote Pilot Ground School	3
AVIA 161L	Remote Pilot Flight Lab	1
<b>Total Units = 8</b>		

When passed with a "C" or better, indicates student qualification to take the FAA Remote Pilot Knowledge Examination.

\*A Certificate of Performance is a departmental award that does not appear on the student's transcript. All courses must be completed within the San Diego Community College District.

**Note:** This program is not eligible for federal financial aid in accordance with Federal regulations.

## Certificate of Performance: Team Resource Management\*

The award of this Certificate represents a focused study of the human factors which affect performance in high-risk teams.

Courses:		Units
AVIA 128	Group Dynamics: Teams Under Stress	3
AVIA 133	Human Factors in Aviation	3
AVIA 228	Group Dynamics II	3
<b>Total Units = 9</b>		

\*A Certificate of Performance is a departmental award that does not appear on the student's

transcript. All courses must be completed within the San Diego Community College District.

**Note:** This program is not eligible for federal financial aid in accordance with Federal regulations.

## Certificate of Achievement: Aviation Operations Management

The Aviation Operations Management Certificate of Achievement is designed to prepare a student for employment as an entry-level line supervisor or manager in an aviation operations-related field.

Courses Required for the Major:		Units
AVIA 101	Private Pilot Ground School	3
AVIA 105	Introduction to Aviation and Aerospace	3
AVIA 125	Aviation and Airport Management	3
AVIA 133	Human Factors in Aviation	3
BUSE 119	Business Communications	3

**Select one of the following leadership/management-related courses:**

AVIA 128	Group Dynamics for High Risk Teams	3
BUSE 201	Business Organization and Management	3
BUSE 205	Leadership Theory and Practice	3

**Total Units = 18**

**Note:** FAA-issued Private Pilot certificate satisfies the AVIA 101 requirement.

Students satisfying requirements via FAA certificates must complete alternate coursework approved by the department in order to satisfy the requirement for 18 units in the major.

## Associate of Science Degree: Aviation Business Administration

Courses Required for the Major:		Units
AVIA 101	Private Pilot Ground School	3
AVIA 105	Introduction to Aviation and Aerospace	3
AVIA 125	Aviation and Airport Management	3
AVIA 133	Human Factors in Aviation	3
BUSE 119	Business Communications	3

**Note:** FAA-issued Private Pilot certificate satisfies the AVIA 101 requirement.

**Select one of the following leadership/management-related courses:**

AVIA 128	Group Dynamics for High Risk Teams	3
BUSE 201	Business Organization and Management	3

BUSE 205	Leadership Theory and Practice	3
----------	--------------------------------	---

**Select one of the following business information systems-related courses:**

CBTE 180	Microsoft Office	3
CBTE 210	Computers in Business	3
CISC 181	Principles of Information Systems	4

**Select one of the following business economics-related courses:**

ACCT 116A	Financial Accounting	4
ECON 121	Principles of Microeconomics	3

**Select an additional 3 units from the following:**

AVIA 101L	Private Pilot Flight Lab	1
AVIA 115	Aviation Weather	3
AVIA 128	Group Dynamics for High Risk Teams	3
AVIA 228	Group Dynamics II	3
AVIA 270	Aviation Operations Internship / Work Experience	1-4
AVIA 277D	Aviation Service Learning -- on Campus	1-3
ACCT 116A	Financial Accounting	4
ACCT 116B	Managerial Accounting	4
BUSE 140	Business Law and the Legal Environment	3
BUSE 201	Business Organization and Management	3
BUSE 205	Leadership Theory and Practice	3
CBTE 180	Microsoft Office	3
CBTE 210	Computers in Business	3
CISC 181	Principles of Information Systems	4
ECON 120	Principles of Macroeconomics	3
ECON 121	Principles of Microeconomics	3

**Total Units = 27-30**

**Note:** Courses must be taken for a letter grade if used to satisfy degree requirements.

For graduation requirements, see **Requirements for the Associate Degree** on page 88.

**Electives as needed to meet minimum of 60 units required for the degree.**

### Certificate of Achievement: Professional Piloting

The Professional Piloting Certificate of Achievement, when combined with in-aircraft flight training, is designed to prepare a student for employment as an entry-level commercial pilot.

**Courses Required for the Major:** **Units**

AVIA 101	Private Pilot Ground School	3
AVIA 101L	Private Pilot Flight Lab	1

AVIA 105	Introduction to Aviation and Aerospace	3
AVIA 133	Human Factors in Aviation	3
AVIA 195	Instrument Ground School	3
AVIA 195L	Basic Instrument Flight Lab	1
AVIA 196L	Advanced Instrument Flight Lab	1
AVIA 201	Commercial Pilot Ground School	3

**Total Units = 18**

**Note:** FAA-issued Private Pilot certificate satisfies the AVIA 101 and 101L requirements. FAA-issued Instrument Pilot certificate satisfies the AVIA 195, 195L, and 196L requirements. FAA-issued Commercial Pilot certificate satisfies the AVIA 201 requirement.

Students satisfying requirements via FAA certificates must complete alternate coursework approved by the department in order to satisfy the requirement for 18 units in the major.

For graduation requirements, see **Requirements for the Associate Degree** on page 88.

**Electives as needed to meet minimum of 60 units required for the degree.**

### Associate of Science Degree: Professional Aeronautics

The Professional Aeronautics degree combines the requirements for the Professional Piloting Certificate of Achievement with additional academic coursework in preparation for upper division study in aeronautics or a related field.

**Courses Required for the Major:** **Units**

AVIA 101	Private Pilot Ground School	3
AVIA 101L	Private Pilot Flight Lab	1
AVIA 105	Introduction to Aviation and Aerospace	3
AVIA 133	Human Factors in Aviation	3
AVIA 195	Instrument Ground School	3
AVIA 195L	Basic Instrument Flight Lab	1
AVIA 196L	Advanced Instrument Flight Lab	1
AVIA 201	Commercial Pilot Ground School	3

**Select one of the following aviation breadth courses:**

AVIA 115	Aviation Weather	3
AVIA 125	Aviation and Airport Management	3
AVIA 151	Helicopter Ground School	3

**Select one of the following physical science courses (not selected above):**

AVIA 115	Aviation Weather	3
GEOG 101	Physical Geography	3

GEOL 104	Earth Science	3
PHYS 125	General Physics	5
PHYS 180A	General Physics I	4
PHYS 195	Mechanics	5

**Select an additional 3 units from the following:**

AVIA 115	Aviation Weather	3
AVIA 125	Aviation and Airport Management	3
AVIA 128	Group Dynamics for High Risk Teams	3
AVIA 151	Helicopter Ground School	3
AVIA 161	Remote Pilot Ground School	3
AVIA 161L	Remote Pilot Flight Lab	1
AVIA 211	Flight Instructor Ground School	3
AVIA 211L	Basic Visual Flight Instructor Lab	1
AVIA 215L	Basic Instrument Flight Instructor Lab	1
AVIA 216L	Advanced Instrument Flight Instructor Lab	1
AVIA 228	Group Dynamics II	3
AVIA 270	Aviation Operations Internship / Work Experience	1-4
AVIA 277D	Aviation Service Learning -- on Campus	1-3
ACCT 116A	Financial Accounting	4
BUSE 201	Business Organization and Management	3
BUSE 205	Leadership Theory and Practice	3
ECON 121	Principles of Microeconomics	3
PHYS 125	General Physics	5
PHYS 180A	General Physics I	4
PHYS 195	Mechanics	5

**Total Units = 27-31**

**Note:** FAA-issued Private Pilot certificate satisfies the AVIA 101 and 101L requirements. FAA-issued Remote Pilot certificate satisfies the AVIA 161 and 161L requirements. FAA-issued Instrument Pilot certificate satisfies the AVIA 195, 195L, and 196L requirements. FAA-issued Commercial Pilot certificate satisfies the AVIA 201 requirement.

Students satisfying requirements via FAA certificates may need to complete alternate coursework approved by the department in order to satisfy the requirement for 18 units in the major.

For graduation requirements, see **Requirements for the Associate Degree** on page 88.

**Electives as needed to meet minimum of 60 units required for the degree.**

# Biology

Award Type	Units
------------	-------

**Associate of Science Degree:**

Biology Studies	18*
-----------------	-----

\* and courses to meet graduation requirements, general education and electives as needed to meet the minimum of 60 units required for the degree.

**Associate in Science for Transfer Degree:**

Biology	36-38
---------	-------

## Program Description

The Biology program prepares students who are transferring to four year institutions to earn baccalaureate degrees in a wide array of majors in the biological sciences. The program curriculum focuses on the fundamental biological themes and processes of cellular, molecular, and organismal biology, the chemical foundation of life, physics, math, and general education. The program also emphasizes the scientific processes and laboratory experiences to gather, organize, analyze data, and communicate results, as well as basic mathematical and statistical computations for exploring how organisms acquire and use energy to maintain homeostasis, how they reproduce, and how they interact with each other and adapt to their environment.

## Program Learning Outcomes

Students who complete the Biology program will be able to:

- Apply the scientific method in order to explain natural phenomena and world.
- Gather, organize, and analyze data and illustrate results in graphical and appropriate formats.
- Use acquired knowledge of biology to evaluate current events.
- Communicate core concepts and processes central to biology using scientific terminology.

## Transfer Information

Common university majors related to the field of Biology include:

- Agricultural Science
- Biochemistry
- Bioengineering and Technology