AT 220  Advanced Automotive Transmissions  (3)
2 hours lecture - 3 hours laboratory
Prerequisite:A minimum grade of ‘C’ in AT 120
Transfer acceptability: CSU
Advanced specialized training in automatic transmissions currently in use in General Motors vehicles with an emphasis on the 3T40 transaxle.

AT 225  Automotive Engine Rebuilding  (3)
2 hours lecture - 4 hours laboratory
Transfer acceptability: CSU
The complete rebuilding of at least one automobile engine using the machine tools and techniques of industry.

**Aviation Sciences (AVIA)**

Contact the Earth, Space, and Aviation Sciences Department for further information.
(760) 744-1150, ext. 2512
Office: NS-110G
For transfer information, consult a Palomar College Counselor.

**Associate in Science Degrees**
AS Degree requirements are listed in Section 6 (green pages).
*Aviation Operations and Management
*Aircraft Commercial Pilot

**Certificates of Achievement**
Certificate of Achievement requirements are listed in Section 6 (green pages).
*Aviation Operations and Management
*Aircraft Commercial Pilot

**Programs of Study**

**Aviation Operations and Management**
For students interested in the business or piloting aspects of aviation. Transfers to some four year programs in this field.

**A.S. Degree Major or Certificate of Achievement**

<table>
<thead>
<tr>
<th>Program Requirements</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVIA 100  Introduction to Aviation Sciences</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 105  Basic Pilot Ground School</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 120  Aviation Weather</td>
<td>3</td>
</tr>
<tr>
<td>BUS 205  Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>ECON 101  Principles of Economics (Macro)</td>
<td>3</td>
</tr>
<tr>
<td>ECON 102  Principles of Economics (Micro)</td>
<td>3</td>
</tr>
<tr>
<td>Elective Courses (Select 15 units minimum)</td>
<td></td>
</tr>
<tr>
<td>ACCT 201 and Financial Accounting</td>
<td>4</td>
</tr>
<tr>
<td>ACCT 104  Accounting Spreadsheet Concepts</td>
<td>2</td>
</tr>
<tr>
<td>AVIA 106  Commercial Pilot Ground School</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 107  Instrument Pilot Ground School</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 145  Glass Cockpits and GPS Navigation</td>
<td>1</td>
</tr>
<tr>
<td>BUS 115  Business Law</td>
<td>3</td>
</tr>
<tr>
<td>BUS 155  Marketing</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 110  Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>BMGT 115  Organizational Theory and Design</td>
<td>3</td>
</tr>
<tr>
<td>CSIT 105  Computer Concepts and Applications</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 110  Meteorology/Weather and Climate</td>
<td>3</td>
</tr>
<tr>
<td>MATH 115  Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 120  Elementary Statistics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 120  General Physics</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 121  General Physics</td>
<td>4</td>
</tr>
<tr>
<td>CE 100  Cooperative Education</td>
<td>1, 2, 3, 4</td>
</tr>
<tr>
<td><strong>TOTAL UNITS</strong></td>
<td><strong>33</strong></td>
</tr>
</tbody>
</table>

**Aircraft Commercial Pilot**
Prepares students for employment as commercial pilots in air taxi and other field related flying operations. Transfers to some four-year programs in this field.

**A.S. Degree Major or Certificate of Achievement**

<table>
<thead>
<tr>
<th>Program Requirements</th>
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</tr>
</thead>
<tbody>
<tr>
<td>*AVIA 75  Private Pilot Certification</td>
<td>2</td>
</tr>
<tr>
<td>*AVIA 80  Instrument Rating Certification</td>
<td>2</td>
</tr>
<tr>
<td>*AVIA 85  Commercial Pilot Certification</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 100  Introduction to Aviation Sciences</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 105  Basic Pilot Ground School</td>
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</tr>
<tr>
<td>AVIA 106  Commercial Pilot Ground School</td>
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</tr>
<tr>
<td>AVIA 107  Instrument Pilot Ground School</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 120  Aviation Weather</td>
<td>3</td>
</tr>
<tr>
<td>AVIA 145  Glass Cockpits and GPS Navigation</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL UNITS</strong></td>
<td><strong>23</strong></td>
</tr>
</tbody>
</table>

*Flight training is the sole responsibility of each student and is contracted with an F.A.A. approved flight school at the student’s own expense. The Palomar Community College District accepts no responsibility or liability for the student’s flight training program.

**Course Offerings**

Courses numbered under 100 are not intended for transfer credit.

**AVIA 75  Private Pilot Certification**  (2)
1 hour lecture - 3 hours laboratory
Note: Pass/No Pass grading only
Upon presentation of a Private Pilot Certificate, the student will be given credit (no grade). Flight training is to be completed off campus with an F.A.A. certified flight instructor of the student’s choice and at the student’s own expense. The Palomar Community College District accepts no responsibility or liability for the flight training obtained from private instructors. The student should register for this course in the semester during which the training is to be completed.

**AVIA 80  Instrument Rating Certification**  (2)
1 hour lecture - 3 hours laboratory
Note: Pass/No Pass grading only
Upon presentation of an Instrument Rating, the student will be given credit (no grade). Flight training is to be completed off campus with an F.A.A certified flight instructor of the student’s choice and at the student’s own expense. The Palomar Community College District accepts no responsibility or liability for the flight training obtained from private instructors. The student should register for this course in the semester during which the training is to be completed.

**AVIA 85  Commercial Pilot Certification**  (3)
1 hour lecture - 6 hours laboratory
Note: Pass/No Pass grading only
Upon presentation of a Commercial Pilot Certificate, the student will be given credit (no grade). Flight training is to be completed off campus with an F.A.A. certified flight instructor of the student’s choice and at the student’s own expense. The Palomar Community College District accepts no responsibility or liability for the flight training obtained from private instructors. The student should register for this course in the semester during which the training is to be completed.

**AVIA 100  Introduction to Aviation Sciences**  (3)
3 hours lecture
Transfer acceptability: CSU
A survey of the aerospace field including the functions and operations of various federal and state regulating aviation agencies and airport based companies such as air carrier, general aviation, aviation maintenance, flight schools, and other major occupational and supportive areas.
AVIA 105  Basic Pilot Ground School  (3)
3 hours lecture
Transfer acceptability: CSU
A study of Federal Aviation Regulations, flight data, aerodynamics, weather and navigation, radio communications, aircraft and engine operation, flight instruments, and aircraft performance. Prepares the student for the Federal Aviation Administration's Private Pilot written examination.

AVIA 106  Commercial Pilot Ground School  (3)
3 hours lecture
Prerequisite: Private Pilot Certificate or AVIA 105 with concurrent or prior flight training
Transfer acceptability: CSU
A comprehensive study of aircraft performance, Federal Aviation Regulations, navigation, flight charts and graphs, radio navigation and communications, meteorology, emergency procedures, aerodynamics, flight instruments, and multi-engine procedures. Prepares the student for the Federal Aviation Administration's Commercial Pilot written examination.

AVIA 107  Instrument Pilot Ground School  (3)
3 hours lecture
Prerequisite: Private Pilot Certificate or AVIA 105 with concurrent or prior flight training
Transfer acceptability: CSU
The rules and regulations for instrument flight, interpretation of flight instruments, air navigation, meteorology, instrument flight techniques, air traffic control, and flight planning. Prepares the student for the Federal Aviation Administration's Instrument Pilot written examination.

AVIA 120  Aviation Weather  (3)
3 hours lecture
Transfer acceptability: CSU
Basic principles relating to weather with particular emphasis placed upon the relationship of weather to aviation. Practical instruction is given in the use and interpretation of weather reports, forecasts, and charts.

AVIA 145  Glass Cockpits and GPS Navigation  (1)
1 hour lecture
Transfer acceptability: CSU
Prerequisite: A minimum grade of ‘C’ in AVIA 105 or Private Pilot Certificate
A practical examination of glass cockpit technology and global positioning system navigation in aviation.

Biology (BIOL)

Contact the Life Sciences Department for further information.
(760) 744-1150, ext. 2275
Office: NS-207A

Associate in Science Degrees -
AS Degree requirements are listed in Section 6 (green pages).
• Biology - General
• Biology - Preprofessional

Certificates of Achievement -
Certificate of Achievement requirements are listed in Section 6 (green pages).
• Biology - General
• Biology - Preprofessional

PROGRAMS OF STUDY

Biology – General
Provides intensive lower division preparation for pursuing advanced studies in the Biological Sciences leading towards a Bachelor's Degree and beyond.

A.S. DEGREE MAJOR OR CERTIFICATE OF ACHIEVEMENT

Program Requirements
BIOL 200  Foundations of Biology I  5
BIOL 201  Foundations of Biology II  5
CHEM 110  General Chemistry  3
CHEM 110L  General Chemistry Laboratory  2

Group One (Select a minimum of 1 unit)
BIOL 114L  Ecosystem Biology (Laboratory)  1 - 2
BIOL 195A  Field Studies in Natural History  1 - 3
BIOL 195B  Field Studies in Ecology  1 - 3
BOT 195  Field Study of Native Plants  1 - 3
ZOO 195D  Field Study of Birds  1 - 3

Group Two (Select a minimum of 16 units)
BOT 100  General Botany  4
or
BOT 101  General Botany Lecture  3
and
BOT 101L  General Botany Laboratory  1
BIOL 110  Human Genetics  3
BIOL 114  Ecosystem Biology (Lecture)  3
BIOL 118  General Ecology (Lecture)  3
BIOL 118L  General Ecology (Laboratory)  1
BIOL 130  Marine Biology  4
or
BIOL 131  Marine Biology (Lecture)  3
and
BIOL 131L  Marine Biology (Laboratory)  1
BIOL
ZOO 135  Biology of Marine Mammals  3
BIOL
NUTR 185  Science of Human Nutrition  3
BIOL 295  Directed Study in Life Science  1 - 3
MICR 200  Fundamentals of Microbiology  4
ZOO 100  General Zoology  4
or
ZOO 101  General Zoology (Lecture)  3
and
ZOO 101L  General Zoology (Laboratory)  1
ZOO 120  Animal Behavior  3
ZOO 145  Introduction to Anatomy and Physiology  3
ZOO 145L  Introduction to Anatomy and Physiology Laboratory  1
ZOO 200  Anatomy  4
ZOO 203  Physiology  4
ZOO 295  Directed Study in Zoology  1 - 3

MINIMUM TOTAL UNITS  32

Recommended Electives: CHEM 100, 115, 115L; MATH 110, 115, 135, 140, 141; CSIT 105

See Catalog addendum at http://www.palomar.edu/catalog