

AVIATION SCIENCE

Rock Creek Campus
Building 2, Room 230
971-722-7256

Southeast Center
Mt. Tabor Hall (MTH), Room 128
971-722-6176

www.pcc.edu/fly

CAREER AND PROGRAM DESCRIPTION

The traditional entry-level position for professional airplane and helicopter pilots is as a certified flight instructor (CFI). This position offers the opportunity to gain experience sought by companies that employ pilots in a variety of interesting and challenging positions. Career opportunities for airplane pilots include work in flight instruction, charter, corporate cargo, and airline industries. Career opportunities for helicopter pilots include flight instruction, charter, corporate, air-ambulance and external load operations. Flight classes are conducted at Hillsboro Aviation, an accredited FAA Part 141 certified flight school, located at the Hillsboro and Troutdale Airports. Additional fees apply for these classes. Visit the department website for a list of fees.

DEGREES AND CERTIFICATES

Associate of Applied Science Degree

Aviation Science Airplane
Aviation Science Helicopter

PREREQUISITES AND REQUIREMENTS

Applicants must take the placement test administered through the campus assessment centers. Minimum test scores:

Placement into MTH 60 or higher
Placement into WR 115 or higher

Attendance at an aviation science orientation or individual advising recommended prior to beginning the program. Please see www.pcc.edu/fly for dates or contact the Aviation Science Department for dates or appointments.

Additionally, the FAA requires a Class II Medical Certificate prior to beginning flight training. See www.pcc.edu/fly and click on "Getting Started" for details.

AVIATION SCIENCE - AIRPLANE AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for course planning.

Aviation Science - Airplane Degree Credit Summary

| | |
|-----------------------------|-----------------|
| AVS | 70 |
| Remaining General Education | 12 |
| WR | 4 |
| GS | 4 |
| <hr/> | |
| | Credit Total 90 |

COURSE OF STUDY: FLIGHT INSTRUCTOR OPTION

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

| | | | |
|-----|-----|--|-----|
| AVS | 107 | Flight Prep Lab Level I | 1 |
| AVS | 120 | Airplane: Private Pilot Ground | 4 |
| AVS | 125 | Airplane: Private Pilot Flight ¹ | 3 |
| | | or | |
| AVS | 121 | Airplane Pre-Solo Flight ¹ | (1) |
| | | and | |
| AVS | 122 | Airplane Pre-Cross Country Flight ¹ | (1) |
| | | and | |
| AVS | 123 | Airplane Cross Country/Test Prep ¹ | (1) |
| AVS | 127 | Introduction to Aviation | 4 |
| WR | 121 | English Composition | 4 |

Second Term

| | | | |
|-----|-----|--|-----|
| AVS | 107 | Flight Prep Lab Level I | 1 |
| AVS | 130 | Instrument Ground School | 4 |
| AVS | 135 | Airplane: Instrument Flight ² | 3 |
| | | or | |
| AVS | 131 | Airplane Instrument Attitude/Nav ² | (1) |
| | | and | |
| AVS | 132 | Airplane Instrument Approaches ² | (1) |
| | | and | |
| AVS | 133 | Airplane Instrument Cross-Country ² | (1) |
| AVS | 137 | Applied Aerodynamics | 4 |

Third Term

| | | | |
|-----|-----|--|-----|
| AVS | 107 | Flight Prep Lab Level I | 1 |
| AVS | 140 | Airplane: Commercial Pilot Ground | 4 |
| AVS | 145 | Introduction to Commercial Airplane ³ | 3 |
| | | or | |
| AVS | 141 | Airplane Commercial XC/Night ³ | (1) |
| | | and | |
| AVS | 142 | Airplane XC Exploration ³ | (1) |
| | | and | |
| AVS | 143 | Airplane Commercial Precision XC ³ | (1) |
| AVS | 157 | Aircraft Systems & Structures I: Airframe | 3 |

Fourth Term

| | | | |
|-----|-----|--|-----|
| AVS | 207 | Flight Prep Lab Level II | 1 |
| AVS | 225 | Airplane: Commercial Flight ⁴ | 4 |
| | | or | |
| AVS | 221 | Airplane Complex Airplanes ⁴ | (1) |
| | | and | |
| AVS | 222 | Airplane Commercial Maneuvers ⁴ | (1) |
| | | and | |
| AVS | 223 | Airplane Commercial Proficiency ⁴ | (1) |
| | | and | |
| AVS | 224 | Airplane Multi-Engine ⁴ | (1) |
| GS | 109 | Meteorology* | 4 |
| | | General Education | 4 |

Fifth Term

| | | | |
|-----|-----|---|-----|
| AVS | 167 | Aircraft Systems: Powerplant | 3 |
| AVS | 207 | Flight Prep Lab Level II | 1 |
| AVS | 227 | Aviation Careers | 4 |
| AVS | 230 | Airplane: Certified Flight Instructor Ground | 4 |
| AVS | 235 | Airplane: Certified Flight Instructor Flight ⁵ | 2 |
| | | or | |
| AVS | 231 | Airplane CFI Introduction ⁵ | (1) |
| | | and | |
| AVS | 232 | Airplane CFI Test Prep ⁵ | (1) |

Sixth Term

| | | |
|-------------------|--------------------------------|---|
| AVS 207 | Flight Prep Lab Level II | 1 |
| AVS 241 | Airplane: CFII Ground/Flight | 3 |
| AVS 242 | Airplane: MEI Ground/Flight | 2 |
| AVS 267 | Economics of Flight Operations | 4 |
| General Education | | 4 |

Seventh Term

| | | |
|-------------------|------------------------------|---|
| AVS 207 | Flight Prep Lab Level II | 1 |
| AVS 237 | Aviation Law and Regulations | 4 |
| AVS 255 | Airplane: Pilot Performance | 1 |
| General Education | | 4 |

*Could be used as General Education

¹Students can take either AVS 125 or AVS 121, 122 and 123

²Students can take either AVS 135 or AVS 131, 132 and 133

³Students can take either AVS 145 or AVS 141, 142 and 143

⁴Students can take either AVS 225 or AVS 221, 222, 223 and 224

⁵Students can take either AVS 235 or AVS 231 and 232

AVIATION SCIENCE - AIRPLANE AAS DEGREE**Aviation Science Airplane Degree Credit Summary**

| | |
|------------------------------------|----|
| AVS | 61 |
| Remaining General Education | 12 |
| Aviation Science Program Electives | 9 |
| WR | 4 |
| GS | 4 |
| <hr/> | |
| Credit Total | 90 |

COURSE OF STUDY: WITHOUT FLIGHT INSTRUCTOR OPTION

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

| | | |
|---------|--|-----|
| AVS 107 | Flight Prep Lab Level I | 1 |
| AVS 120 | Airplane: Private Pilot Ground | 4 |
| AVS 125 | Airplane: Private Pilot Flight ¹ | 3 |
| or | | |
| AVS 121 | Airplane Pre-Solo Flight ¹ | (1) |
| and | | |
| AVS 122 | Airplane Pre-Cross Country Flight ¹ | (1) |
| and | | |
| AVS 123 | Airplane Cross Country/Test Prep ¹ | (1) |
| AVS 127 | Introduction to Aviation | 4 |
| WR 121 | English Composition | 4 |

Second Term

| | | |
|---------|--|-----|
| AVS 107 | Flight Prep Lab Level I | 1 |
| AVS 130 | Instrument Ground School | 4 |
| AVS 135 | Airplane: Instrument Flight ² | 3 |
| or | | |
| AVS 131 | Airplane Instrument Attitude/Nav ² | (1) |
| and | | |
| AVS 132 | Airplane Instrument Approaches ² | (1) |
| and | | |
| AVS 133 | Airplane Instrument Cross-Country ² | (1) |
| AVS 137 | Applied Aerodynamics | 4 |

Third Term

| | | |
|---------|--|-----|
| AVS 107 | Flight Prep Lab Level I | 1 |
| AVS 140 | Airplane: Commercial Pilot Ground | 4 |
| AVS 145 | Introduction to Commercial Airplane ³ | 3 |
| or | | |
| AVS 141 | Airplane Commercial XC/Night ³ | (1) |
| and | | |
| AVS 142 | Airplane XC Exploration ³ | (1) |
| and | | |
| AVS 143 | Airplane Commercial Precision XC ³ | (1) |
| AVS 157 | Aircraft Systems & Structures I: Airframe | 3 |

Fourth Term

| | | |
|-------------------|--|-----|
| AVS 207 | Flight Prep Lab Level II | 1 |
| AVS 225 | Airplane: Commercial Flight ⁴ | 4 |
| or | | |
| AVS 221 | Airplane Complex Airplanes ⁴ | (1) |
| and | | |
| AVS 222 | Airplane Commercial Maneuvers ⁴ | (1) |
| and | | |
| AVS 223 | Airplane Commercial Proficiency ⁴ | (1) |
| and | | |
| AVS 224 | Airplane Multi-Engine ⁴ | (1) |
| GS 109 | Meteorology* | 4 |
| General Education | | 4 |

Fifth Term

| | | |
|------------------------------------|------------------------------|---|
| AVS 167 | Aircraft Systems: Powerplant | 3 |
| AVS 207 | Flight Prep Level II | 1 |
| AVS 227 | Aviation Careers | 4 |
| AVS 275 | Airplane: Professional Pilot | 3 |
| Aviation Science Program Electives | | 1 |

Sixth Term

| | | |
|------------------------------------|--------------------------------|---|
| AVS 267 | Economics of Flight Operations | 4 |
| General Education | | 4 |
| Aviation Science Program Electives | | 8 |

Seventh Term

| | | |
|-------------------|------------------------------|---|
| AVS 207 | Flight Prep Lab Level II | 1 |
| AVS 237 | Aviation Law and Regulations | 4 |
| AVS 255 | Airplane: Pilot Performance | 1 |
| General Education | | 4 |

*Could be used as General Education

¹Students can take either AVS 125 or AVS 121, 122 and 123

²Students can take either AVS 135 or AVS 131, 132 and 133

³Students can take either AVS 145 or AVS 141, 142 and 143

⁴Students can take either AVS 225 or AVS 221, 222, 223 and 224

AVIATION SCIENCE - HELICOPTER AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Students should consult with program advisors for course planning.

Aviation Science Helicopter Degree Credit Summary

| | |
|------------------------------------|----|
| AVS | 58 |
| Aviation Science Program Electives | 16 |
| Remaining General Education | 8 |
| PHY | 4 |
| GS | 4 |
| <hr/> | |
| Credit Total | 90 |

COURSE OF STUDY-WITH INSTRUMENT RATING

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

| | | |
|-------------------|---|-----|
| AVS 107 | Flight Prep Level I | 1 |
| AVS 110 | Helicopter: Private Pilot Ground | 4 |
| AVS 115 | Helicopter: Private Pilot Flight ¹ | 3 |
| or | | |
| AVS 111 | Helicopter Pre-Solo ¹ | (1) |
| and | | |
| AVS 112 | Helicopter Private Cross Country ¹ | (1) |
| and | | |
| AVS 113 | Helicopter Private Proficiency ¹ | (1) |
| AVS 127 | Introduction to Aviation | 4 |
| General Education | | 4 |

Second Term

| | | |
|---------|--|-----|
| AVS 107 | Flight Prep Level I | 1 |
| AVS 137 | Applied Aerodynamics | 4 |
| AVS 150 | Helicopter: Commercial Ground | 3 |
| AVS 155 | Helicopter: Introduction to Commercial Flight ² | 3 |
| or | | |
| AVS 151 | Helicopter Commercial XC ² | (1) |
| and | | |
| AVS 152 | Helicopter Introduction to Commercial Basics ² | (1) |
| and | | |
| AVS 153 | Helicopter Commercial Basic Practice ² | (1) |
| GS 109 | Meteorology* | 4 |

Third Term

| | | |
|---------|---|-----|
| AVS 130 | Instrument Ground School | 4 |
| AVS 157 | Aircraft Systems & Structures I: Airframe | 3 |
| AVS 207 | Flight Prep Level II | 1 |
| AVS 215 | Helicopter: Commercial Flight-B ³ | 4 |
| or | | |
| AVS 211 | Helicopter Instrument Introduction ³ | (1) |
| and | | |
| AVS 212 | Helicopter Instrument Procedures ³ | (1) |
| and | | |
| AVS 213 | Helicopter Advanced Commercial ³ | (1) |
| and | | |
| AVS 214 | Helicopter Commercial Test Prep ³ | (1) |
| PHY 101 | Fundamentals of Physics I* | 4 |
| or | | |
| PHY 201 | General Physics* | (4) |

Fourth Term

| | | |
|---------|---|-----|
| AVS 167 | Aircraft Systems: Powerplant | 3 |
| AVS 207 | Flight Prep Level II | 1 |
| AVS 227 | Aviation Careers | 4 |
| AVS 260 | Helicopter: CFI Ground | 4 |
| AVS 265 | Helicopter: CFI Flight ⁴ | 3 |
| or | | |
| AVS 261 | Helicopter Introduction to CFI ⁴ | (1) |
| and | | |
| AVS 262 | Helicopter CFI Development ⁴ | (1) |
| and | | |
| AVS 263 | Helicopter CFI Test Prep ⁴ | (1) |

Fifth Term

| | | |
|------------------------------------|------------------------------|---|
| AVS 237 | Aviation Law and Regulations | 4 |
| Aviation Science Program Electives | | 8 |

Sixth Term

| | | |
|------------------------------------|--------------------------------|---|
| AVS 267 | Economics of Flight Operations | 4 |
| Aviation Science Program Electives | | 8 |
| General Education | | 4 |

**Could be used as General Education*

¹Students can take either AVS 115 or AVS 111, 112 and 113

²Students can take either AVS 155 or AVS 151, 152 and 153

³Students can take either AVS 215 or AVS 211, 212, 213 and 214

⁴Students can take either AVS 265 or AVS 261, 262 and 263

AVIATION SCIENCE - HELICOPTER AAS DEGREE

Minimum 90 credits. Students must also meet Associate Degree Comprehensive Requirements and Associate of Applied Science Requirements. Students must complete a total of sixteen credits of General Education. Some courses specified within the program may be used as General Education. Students should consult with program advisors for assistance in course planning.

Aviation Science Helicopter Degree Credit Summary

| | |
|------------------------------------|----------|
| AVS | 53 |
| Aviation Science Program Electives | 21 |
| Remaining General Education | 8 |
| PHY | 4 |
| <u>GS</u> | <u>4</u> |
| Credit Total | 90 |

COURSE OF STUDY-WITHOUT INSTRUMENT RATING

The coursework listed below is required. The following is an example of a term-by-term breakdown.

First Term

| | | |
|-------------------|---|-----|
| AVS 107 | Flight Prep Lab Level I | 1 |
| AVS 110 | Helicopter: Private Pilot Ground | 4 |
| AVS 115 | Helicopter: Private Pilot Flight ¹ | 3 |
| or | | |
| AVS 111 | Helicopter Pre-Solo ¹ | (1) |
| and | | |
| AVS 112 | Helicopter Private Cross Country ¹ | (1) |
| and | | |
| AVS 113 | Helicopter Private Proficiency ¹ | (1) |
| AVS 127 | Introduction to Aviation | 4 |
| General Education | | 4 |

Second Term

| | | |
|---------|--|-----|
| AVS 107 | Flight Prep Level I | 1 |
| AVS 137 | Applied Aerodynamics | 4 |
| AVS 150 | Helicopter: Commercial Ground | 3 |
| AVS 155 | Helicopter: Introduction to Commercial Flight ² | 3 |
| or | | |
| AVS 151 | Helicopter Commercial XC ² | (1) |
| and | | |
| AVS 152 | Helicopter Introduction ² to Commercial Basics | (1) |
| and | | |
| AVS 153 | Helicopter Commercial Basic Practice ² | (1) |
| GS 109 | Meteorology* | 4 |

Third Term

| | | | |
|------------------------------------|-----|---|-----|
| AVS | 157 | Aircraft Systems & Structures I: Airframe | 3 |
| AVS | 205 | Helicopter: Commercial Flight A ³ | 3 |
| | or | | |
| AVS | 211 | Helicopter Instrument Introduction ³ | (1) |
| | and | | |
| AVS | 213 | Helicopter Advanced Commercial ³ | (1) |
| | and | | |
| AVS | 214 | Helicopter Commercial Test Prep ³ | (1) |
| AVS | 207 | Flight Prep Lab Level II | 1 |
| Aviation Science Program Electives | | | 5 |
| PHY | 101 | Fundamentals of Physics I* | 4 |
| | or | | |
| PHY | 201 | General Physics* | (4) |

Fourth Term

| | | | |
|-----|-----|---|-----|
| AVS | 167 | Aircraft Systems: Powerplant | 3 |
| AVS | 207 | Flight Prep Lab Level II | 1 |
| AVS | 227 | Aviation Careers | 4 |
| AVS | 260 | Helicopter: CFI Ground | 4 |
| AVS | 265 | Helicopter: CFI Flight ⁴ | 3 |
| | or | | |
| AVS | 261 | Helicopter Introduction to CFI ⁴ | (1) |
| | and | | |
| AVS | 262 | Helicopter CFI Development ⁴ | (1) |
| | and | | |
| AVS | 263 | Helicopter CFI Test Prep ⁴ | (1) |

Fifth Term

| | | | |
|------------------------------------|-----|------------------------------|---|
| AVS | 237 | Aviation Law and Regulations | 4 |
| Aviation Science Program Electives | | | 8 |

Sixth Term

| | | | |
|------------------------------------|-----|--------------------------------|---|
| AVS | 267 | Economics of Flight Operations | 4 |
| Aviation Science Program Electives | | | 8 |
| General Education | | | 4 |

*Could be used as General Education

¹Students can take either AVS 115 or AVS 111, 112 and 113

²Students can take either AVS 155 or AVS 151, 152 and 153

³Students can take either AVS 205 or AVS 211, 213 and 214

⁴Students can take either AVS 265 or AVS 261, 262 and 263

Aviation Science Program Electives

| | | | |
|-----|-----|---|---|
| BA | 101 | Introduction to Business | 4 |
| BA | 206 | Management Fundamentals | 3 |
| CAS | 133 | Basic Computer Skills/Microsoft Office | 4 |
| CAS | 170 | Beginning Excel | 3 |
| CAS | 171 | Intermediate Excel | 3 |
| CAS | 216 | Beginning Word | 3 |
| CAS | 217 | Intermediate Word | 3 |
| CIS | 120 | Computer Concepts I* | 4 |
| CIS | 121 | Computer Concepts II* | 4 |
| EC | 200 | Introduction to Economics* | 4 |
| EC | 201 | Principles of Economics: Microeconomics* | 4 |
| EC | 202 | Principles of Economics: Macroeconomics* | 4 |
| PHY | 101 | Fundamentals of Physics I* | 4 |
| PSY | 101 | Psychology and Human Relations* | 4 |
| WR | 117 | Introduction to Technical Writing | 3 |
| WR | 121 | English Composition | 4 |
| WR | 227 | Technical and Professional Writing I | 4 |

Note: Other electives applicable to an aviation career may be approved on a case by case basis. In order to meet the credit minimum for the degree requirements, some courses may count toward Electives or General Education, but not both.

COURSE DESCRIPTIONS

AVS 107 Flight Preparation Lab Level I 1.00 Provides an opportunity for practice and preparation in knowledge and skills that are directly related to Aviation Science 100-level airplane or helicopter flight courses. Areas covered include weather, flight planning, maneuvers, weight and balance, aircraft performance and lesson preparation techniques. Students must be enrolled in this class if they are working towards completion of a flight course.

AVS 110 Helicopter Private Pilot Ground School 4.00 Covers fundamentals of flight, helicopter systems, aeronautical publications, Federal Aviation Regulations, navigation, flight planning, radio procedures and weather. Presents sufficient knowledge to prepare for the FAA Private Pilot Rotocraft knowledge test. Audit available.

AVS 111 Helicopter: Pre-Solo 1.00 Introduces basic and emergency helicopter maneuvers necessary for flight in the local area. Prepares the student for their first local solo flights. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 111, 112, 113 sequence is an alternative equivalent to AVS 115. Coreq: AVS 107 and AVS 110. Prerequisite: MTH 60, WR 115 and AVS 127.

AVS 112 Helicopter: Private Cross-Country 1.00 Introduces planning and flight skills and procedures appropriate to cross-country and night flight. Students who successfully complete this course will conduct their solo cross-country flight as part of the course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 111, 112, 113 sequence is an alternative equivalent to AVS 115. Coreq: AVS 107. Prerequisite: AVS 111.

AVS 113 Helicopter: Private Proficiency 1.00 Preparation to take the FAA Helicopter Private practical test. Emphasis is on proficiency in the flight maneuvers, thorough preflight actions and exercising safe decision-making. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 111, 112, 113 sequence is an alternative equivalent to AVS 115. Coreq: AVS 107 Prerequisite: AVS 112.

AVS Helicopter Private Pilot Flight 3.00 Familiarizes student with the operation of helicopters. Fundamentals of flight, emergency procedures, air traffic control and operational procedures are explored. Prepares student for the FAA Private Pilot Rotocraft Helicopter practical test. The AVS 111, 112, 113 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Coreq: AVS 107 and AVS 110. Prerequisite: MTH 60, WR 115 and AVS 127.

AVS 120 Airplane: Private Pilot Ground School 4.00 Covers fundamentals of flight, aeronautical publications, Federal Aviation Regulations, navigation, flight planning, radio procedures and weather. Presents sufficient knowledge to prepare for the FAA Private Pilot knowledge test. Open to the general public. Audit available.

AVS 121 Airplane: Pre-Solo Flight 1.00 Introduces basic airplane handling, emergency procedures and local flight operations. Students who successfully complete this course will conduct their first local solo flight as part of the course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to AVS 125. Coreq: AVS 107 and AVS 120 Prerequisite: MTH 60, WR 115 and AVS 127.

AVS 122 Airplane: Pre-Cross-Country Flight 1.00 Introduces planning and flight skills and procedures appropriate to cross-country and night flight. Includes some training by reference to instruments. Students who successfully complete this course will conduct their first solo cross-country flight as part of the course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to AVS 125. Coreq: AVS 107. Prerequisite: AVS 121.

AVS 123 Airplane: Cross-Country/Test Prep 1.00 Student completes the cross-country requirements, including the long solo cross-country flight, and prepares to take the FAA practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to AVS 125. Coreq: AVS 107 Prerequisite: AVS 122.

AVS 125 Airplane: Private Pilot Flight 3.00 Familiarizes student with operation of single engine aircraft. Fundamentals of flight, air traffic control and operational procedures are explored. Prepares student for the FAA Private Pilot Airplane practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 121, 122, 123 sequence is an alternative equivalent to this course. Coreq: AVS 107 and AVS 120. Prerequisite: MTH 60, WR 115 and AVS 127.

AVS 127 Introduction to Aviation 4.00 Examines aviation from early flight to future potentials. Introduces career opportunities in all fields of aviation and outlines career advancement possibilities. Provides general overview of pilot certificates and ratings and training aircraft used. May include visits to area aviation facilities. Open to general public. Audit available.

AVS 130 Instrument Ground School 4.00 Covers fundamentals of instrument flight planning, use of flight and navigation instrumentation, air traffic control procedures, radio navigation systems including the concepts of instrument flight. Presents sufficient knowledge to prepare for the FAA Instrument Rating knowledge test. NOTE: Course not recommended without prior flight experience. Prerequisite: AVS 120. Audit available.

AVS 131 Airplane: Instrument Attitude/Navigation 1.00 Develops basic attitude instrument flying skills and radio navigation techniques as well as holding patterns. Students will fly in the airplane and in a simulator. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 131, 132, 133 sequence is an alternative equivalent to AVS 135. Co-req: AVS 107 and AVS 130. Prerequisite: AVS 123 or AVS 125.

AVS 132 Airplane: Instrument Approach 1.00 Develops knowledge of procedures relating to the departure and terminal phase of an instrument flight. Students will fly in the airplane and in a simulator. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 131, 132, 133 sequence is an alternative equivalent to AVS 135. Coreq: AVS 107 Prerequisite: AVS 131

AVS 133 Airplane: Instrument Cross-Country 1.00 Develops knowledge of cross-country flight planning under Instrument Flight Rules. Covers lost-comm procedures. Includes preparation for the FAA practical test. Students will fly in the airplane and in a simulator. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 131, 132, 133 sequence is an alternative equivalent to AVS 135. Coreq: AVS 107. Prerequisite: AVS 132.

AVS 135 Airplane: Instrument Flight 3.00 Receive training in instrument flight operations including basic attitude instrument skills, radio navigation, departure and approach procedures and instrument cross-country planning and flying. Prepares student for the FAA Instrument Rating – Airplane practical test. The AVS 131, 132, 133 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 125 or AVS 123. Corequisite: AVS 107 and AVS 130.

AVS 137 Applied Aerodynamics 4.00 Introduces aerodynamics. Explores various concepts and theories relevant to modern aviation. Open to the general public (no math prerequisite.) Audit available.

AVS 140 Airplane: Comm Pilot Ground 4.00 Covers advanced concepts of flight maneuvers, Federal Aviation Regulations, weight and balance, and other aeronautical skill topics. Presents sufficient knowledge to prepare for the FAA Commercial pilot knowledge test. Prerequisite: AVS 130. Audit available.

AVS 141 Airplane: Commercial XC/Night Intro 1.00 Includes both day and night cross-country instruction as well as local and cross-country solo night flights. Emphasis is on commercial standards for planning, judgment and flying long distances during day and night visual conditions. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an alternative equivalent to AVS 145. Coreq: AVS 107 and AVS 140. Prerequisite: AVS 133.

AVS 142 Airplane: Commercial XC Exploration 1.00 Provides the opportunity to build confidence in solo VFR cross-country planning and flying skills in a variety of terrain environments farther from the base of training. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an alternative equivalent to AVS 145. Coreq: AVS 107. Prerequisite: AVS 141.

AVS 143 Airplane: Commercial Precision XC 1.00 Focuses on increasing cross-country flying skills to Commercial Pilot standards. Emphasis will be on maintaining accurate course and arrival times while simultaneously maintaining situational awareness and make safe decisions. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an alternative equivalent to AVS 145. Coreq: AVS 107. Prerequisite: AVS 142.

AVS 145 Introduction to Commercial Airplane 3.00 Begins commercial pilot training activities and includes cross-country flight operations and a review of previous items learned during private pilot training. Students will learn how to plan and execute a cross-country flight as a commercial pilot. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 141, 142, 143 sequence is an equivalent alternative to this course. Prerequisites: AVS 135 or AVS 133. Coreq: AVS 107 and AVS 140.

AVS 150 Helicopter: Commercial Ground 3.00 In depth study of aerodynamics systems, performance, aeronautical charts, regulations, and flight maneuvers all relating specifically to helicopters. Presents sufficient knowledge to prepare for the FAA Commercial Pilot Rotocraft helicopter written test. Audit available.

AVS 151 Helicopter: Commercial XC 1.00 Provides the opportunity for the student to build confidence in solo and cross-country operations and fulfill the cross-country requirements for the Commercial certificate. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 151, 152, 153 sequence is an alternative equivalent to AVS 155. Coreq: AVS 107 and AVS 150. Prerequisite: AVS 113.

AVS 152 Helicopter: Intro to Comm Basics 1.00 Introduces basic maneuvers required for the Commercial certificate. Includes solo lessons during which the student will review Private maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 151, 152, 153 sequence is an alternative equivalent to AVS 155. Coreq: AVS 107. Prerequisite: AVS 151.

AVS 153 Helicopter: Commercial Basic Practice 1.00 Provides the opportunity for additional instruction in the basic commercial maneuvers as well as additional solo practice. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 151, 152, 153 sequence is an alternative equivalent to AVS 155. Coreq: AVS 107. Prerequisite: AVS 152.

AVS 155 Helicopter: Introduction to Commercial Flight 3.00 Begins the commercial pilot training activities. Cross-country flight procedures and emergency maneuvers are the focus. Students must hold a private pilot certificate prior to enrollment. The AVS 151, 152, 153 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 115 or AVS 113. Coreq: AVS 107 and AVS 150.

AVS 157 Aircraft Systems and Structures I: Airframe 3.00 Designed to give students the background in aircraft systems and structures, with an emphasis on airframe components, that will enable them to progress into more advanced aircraft. Provides understanding of the safe and efficient operation of aircraft systems. Prior flight experience recommended. Audit available.

AVS 167 Aircraft Systems: Powerplant 3.00 Designed to give students the background in aircraft systems and structures, with an emphasis on powerplant components, that will enable them to progress into more advanced aircraft. Provides understanding of the safe and efficient operation of aircraft systems. Prior flight experience recommended. Audit available.

AVS 205 Helicopter: Commercial Flight A 3.00 Continues the Commercial Pilot Rotorcraft Helicopter training activities and includes cross-country flight operations and a review of previous items learned during the introduction to Commercial Pilot training. Increase knowledge about efficiently planning and executing cross-country flights as well as off airport operations required for commercial pilots. Does not include training for the instrument rating. The AVS 211, 213, 214 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 153 or AVS 155. Coreq: AVS 207

AVS 207 Flight Preparation Lab Level 2 1.00 Provides an opportunity for practice and preparation in knowledge and skills that are directly related to Aviation Science 200-level airplane or helicopter flight courses. Areas covered include weather, flight planning, maneuvers, weight and balance, aircraft performance and lesson preparation techniques. Students must be enrolled in this class if they are working towards completion of a flight course.

AVS 211 Helicopter: Instrument Intro 1.00 Introduces flight solely by reference to instrument and fulfills the instrument flight requirement for the commercial practical test. Also includes the opportunity for solo practice of VFR maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an alternative equivalent to AVS 215 (without AVS 212 the sequence is equivalent to AVS 205) Coreq: AVS 207. Prerequisite: AVS 154.

AVS 212 Helicopter: Instrument Procedures 1.00 Holding patterns and approach procedures are introduced and practiced in the simulator. Training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an alternative equivalent to AVS 215. Coreq: AVS 207 and AVS 130. Prerequisite: AVS 211.

AVS 213 Helicopter: Advanced Commercial 1.00 Provides both flight instruction in commercial maneuvers and solo practice of maneuvers required for the commercial certificate. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an alternative equivalent to AVS 215. (without AVS 112 the sequence is equivalent to AVS 205) Coreq: AVS 207. Prerequisite: AVS 211.

AVS 214 Helicopter: Commercial Test Prep 1.00 Preparation to take the FAA Commercial practical test. Includes night solo requirements. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 211, 212, 213, 214 sequence is an alternative equivalent to AVS 215 (without AVS 212 the sequence is equivalent to AVS 205). Coreq: AVS 207. Prerequisite: AVS 213.

AVS 215 Helicopter: Commercial Flight B 4.00 Continues the Commercial Pilot Rotorcraft Helicopter training activities and includes cross-country flight operations and a review of previous items learned during the introduction to Commercial Pilot training. Increase knowledge about efficiently planning and executing cross-country flights as well as off airport operations required for commercial pilots. Does not include training for the instrument rating. The AVS 211, 213, 214 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 153 or AVS 155. Coreq: AVS 207.

AVS 221 Airplane: Complex Airplanes 1.00 Introduction to the operation of single-engine airplanes with retractable landing gear and constant-speed propellers. Emphasis on checklist usage and systems management. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 143 or AVS 145.

AVS 222 Airplane: Commercial Maneuvers 1.00 Introduces the precision flight maneuvers required to be performed during the commercial practical test. Emphasis is on accurate procedures and safe practicing techniques. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 221.

AVS 223 Airplane: Commercial Proficiency 1.00 Preparation to take the Commercial Pilot Single-Engine-Land practical test. Emphasis is on safety, procedural discipline, smoothness and precision in all required maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 222.

AVS 224 Airplane: Multi-Engine 1.00 Introduces and develops proficiency in flying multi-engine airplanes in both VFR and IFR operations. Prepares the student to take the Commercial Multi-Engine-Land practical test. Includes preparation work in simulators. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 221, 222, 223, 224 sequence is an alternative equivalent to AVS 225. Coreq: AVS 207. Prerequisite: AVS 223.

AVS 225 Airplane: Commercial Flight 4.00 Concludes commercial pilot training activities and includes complex flight operations, multi-engine operations, advanced systems and performance maneuvers. Students will be prepared to take the Commercial Pilot single-engine land practical test and the multi-engine land additional class rating practical test upon successful completion of the course. The AVS 221, 222, 223, 224 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 143 or AVS 145. Co-requisite: AVS 207.

AVS 227 Aviation Careers 4.00 Designed to prepare students for a career in aviation. Explores aviation employment opportunities. Includes interview and resume preparation. Intended for second year AVS students. Audit available.

AVS 230 Airplane: Flight Instructor Ground 4.00 Includes flight instruction fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 140. Audit available.

AVS 231 Airplane: CFI Intro 1.00 Introduction to flight from the right (instructor) seat and basic critique and analysis. Maneuvers from the Private and Commercial Practical Test Standards will be practiced. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 231, 232 sequence is an alternative equivalent to AVS 235. Coreq: AVS 207 and AVS 230. Prerequisite: AVS 224.

AVS 232 Airplane: CFI Test Prep 1.00 Preparation for the Certified Flight Instructor practical test. Focus is on both teaching techniques and performance of the required maneuvers. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 231, 232, sequence is an alternative equivalent to AVS 235. Coreq: AVS 207. Prerequisite: AVS 231.

AVS 235 Airplane: Flight Instructor Flight 2.00 Provides a structured environment to learn to fly the aircraft from the instructor's seat. Learn to explain, demonstrate and to assess flight performance. Prepares students for the FAA Flight Instructor practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 231, 232 sequence is an equivalent alternative to this course. Prerequisites: AVS 224 or AVS 225. Corequisite: AVS 207 and AVS 230.

AVS 237 Aviation Law and Regulations 4.00 Explores the applicable Federal Aviation Regulations through case law and current events. The FAA's role in the development and regulation of the industry is examined. Covers how to reference, interpret and explain aviation law and regulations. Audit available.

AVS 240 Airplane: CFII/MEI Ground 3.00 Includes Instrument and Multi-Engine subject areas for a Flight Instructor certificate. Presents sufficient knowledge to prepare for the Certified Flight Instructor Instrument knowledge test. Prerequisite: AVS 230.

AVS 241 Airplane: CFII Ground/Flight 3.00 Includes subject areas for an Instrument Airplane rating on a Flight Instructor certificate. Presents sufficient knowledge to prepare for the Certified Flight Instructor - Instrument knowledge test. Prepares students to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor - Instrument practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 230, AVS 235, and FAA Commercial Pilot Certificate with Instrument Rating: CFI certificate. Co-requisite: AVS 207

AVS 242 Airplane: MEI Ground/Flight 2.00 Includes subject areas for Multi-Engine Airplane rating on a Flight Instructor certificate. Prepares student to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor - Multi-Engine practical test. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 230, 235, and FAA Commercial Pilot Certificate with Instrument, CFI ratings. Co-requisite: AVS 207

AVS 245 Airplane: CFII/MEI Flight 2.00 Instruction, flight training and practice teaching that will allow the student to obtain the aeronautical skill and knowledge necessary to apply for the FAA Flight Instructor Instrument and Multi-Engine practical test. Prerequisites: AVS 235 and FAA Commercial Pilot Certificate with Instrument, CFI ratings. Corequisite: AVS 240.

AVS 255 Airplane: Pilot Performance 1.00 Designed to expose students to Cockpit Resource Management. Focuses on workload management and check list usage. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisites: AVS 225 and FAA Commercial Pilot Certificate with Multi-engine Land and Instrument rating. Co-requisite: AVS 207

AVS 260 Helicopter: CFI Ground 4.00 Includes flight instruction fundamentals, evaluation techniques, and related skills necessary for a Flight Instructor certificate. Emphasizes instruction techniques and presents sufficient knowledge to prepare for the FAA Fundamentals of Instructing and CFI knowledge tests. Prerequisite: AVS 150. Audit available.

AVS 261 Helicopter: Intro to CFI 1.00 Introduction to flight from the left (instructor) seat and basic critique and analysis. Maneuvers from the Private and Commercial Practical Test Standards will be practiced. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 261, 262, 263 sequence is an alternative equivalent to AVS 265. Coreq: AVS 207 and AVS 260. Prerequisite: AVS 205 or AVS 214 or AVS 215.

AVS 262 Helicopter: CFI Development 1.00 Focuses on providing effective instruction in maneuvers from the helicopter private and commercial syllabi to practical test standards. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 261, AVS 262, AVS 263 sequence is an alternative equivalent to AVS 265. Coreq: AVS 207. Prerequisite: AVS 261.

AVS 263 Helicopter: CFI Test Prep 1.00 Preparation for the FAA practical test for the Flight Instructor certificate. Increases proficiency in all applicable flight maneuvers including full-down autorotation. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. The AVS 261, 262, 263 sequence is an alternative equivalent to AVS 265. Coreq: AVS 207 Prerequisite: AVS 262.

AVS 265 Helicopter: CFI Flight 3.00 Provides a structured environment to learn to fly the helicopter from the instructor's seat. Learn to explain, demonstrate and to assess flight performance. Prepares students for the FAA Flight Instructor practical test. The AVS 261, 262, 263 sequence is an equivalent alternative to this course. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 205 or 214 or 215. Co-requisites: AVS 207, AVS 260

AVS 267 Economics of Flight Operations 4.00 Examines management philosophies and accounting procedures as they apply to general aviation. Includes business aspects of maintaining and flying aircraft, operating airport facilities, and managing passenger/cargo activities. Guest speakers from the industry may be featured. Audit available.

AVS 275 Airplane: Professional Pilot 3.00 Provides further post-commercial instruction and PIC flight time in single and multi-engine aircraft for those not selecting the flight instructor option. Flight training fees apply and cover a specific amount of training; please see the Course Curriculum and Outcome Guide for detailed information. Prerequisite: AVS 225 and FAA Commercial Pilot Certificate with Instrument rating. Co-requisites: AVS 207