ARIZONA WESTERN COLLEGE
SYLLABUS

AVN 110 AERODYNAMICS & PRINCIPLES OF FLIGHT

Credit Hours: 3 Lecture: 3

PREREQUISITE: None

Course Description
Introduces the aerodynamic principles governing airplane flight and performance. Students examine the four forces of flight, aircraft stability and control, airfoils, stalls and spins, load factors, aircraft performance, density altitude, and aerodynamic decision-making. Course will cover the aeronautical knowledge required for Private Pilot certification and provide preparation for the FAA Private Pilot Airplane Knowledge Test.

1. COURSE GOALS
   - 1.1 Develop a foundational understanding of aerodynamic principles.
   - 1.2 Analyze factors that affect aircraft performance and safety.
   - 1.3 Apply aerodynamic and performance concepts to aeronautical decision making.

2. OUTCOMES
   Upon successful completion, students will be able to:
   - 2.1. Explain the four forces acting on an airplane in flight.
   - 2.2. Describe airflow, pressure distribution, angle of attack, and lift production.
   - 2.3. Explain aircraft stability and the function of primary and secondary flight controls.
   - 2.4. Analyze factors affecting stalls, spins, and load factor.
   - 2.5. Explain the effects of weight, altitude, temperature, wind, and density altitude on aircraft performance.
   - 2.6. Interpret aircraft performance charts and operating limitations.
   - 2.7. Apply aerodynamic knowledge to safe aeronautical decision-making.

3. METHODS OF INSTRUCTION
   - 3.1 Lecture
   - 3.2 Multi-media Presentations
   - 3.3 Group Discussions

4. LEARNING ACTIVITIES
   - 4.1 Aerodynamic Problem Sets
   - 4.2 Aircraft Performance Exercises
   - 4.3 Scenario Based Assignments

5. EVALUATIONS
   - 5.1 Quizzes/Exams
   - 5.2 Assignments
   - 5.3 Participation

6. STUDENT RESPONSIBILITIES
   - 6.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.
   - 6.2 If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. Students who are not attending as of the 45th day of the course may be withdrawn by the instructor. If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.
   - 6.3 Americans with Disabilities Act Accommodations: Arizona Western College provides academic accommodations to students with disabilities through Accessibility Resource Services (ARS). ARS provides reasonable and appropriate accommodations to students who have documented disabilities. It is the responsibility of the student to make the ARS Coordinator aware of the need for accommodations in the classroom prior to the beginning of the semester. Students should follow up with their instructors once the semester begins. To make an appointment call the ARS front desk at (928) 344-7674 or ARS Coordinator at (928) 344-7629, in the College Community Center (3C) building, next to Advising.
   - 6.4 Academic Integrity: Any student participating in acts of academic dishonesty—including, but not limited to, copying the work of other students, using unauthorized “crib notes”, plagiarism, stealing tests, or forging an instructor’s signature—will be subject to the procedures and consequences outlined in AWC’s Student Code of Conduct.
   - 6.5 Texts and Notebooks: Students are required to obtain the class materials for the course.
   - 6.6 Arizona Western College students are expected to attend every class session in which they are enrolled. To comply with Federal Financial Aid regulations (34 CFR 668.21), Arizona Western College (AWC) has established an Attendance Verification process for "No Show" reporting during the first 10 days of each semester. Students who have enrolled but have never attended class may be issued a “No Show” (NS) grade by the professor or instructor and receive a final grade of “NS” on their official academic record. An NS grade may result in a student losing their federal financial aid. For online classes, student attendance in an online class is defined as the following (FSA Handbook, 2012, 5-90):
     - Submitting an academic assignment

- Taking an exam, an interactive tutorial or computer-assisted instruction
- Attending a study group that is assigned by the school
- Participating in an online discussion about academic matters
- Initiating contact with a faculty member to ask a question about the academic subject studied in the course