ARIZONA WESTERN COLLEGE
SYLLABUS

FSC 120 FIRE SERVICE EQUIPMENT, APPARATUS, AND HYDRAULICS
Credit Hours: 3 Lec: 3

PREREQUISITE: None

COURSE DESCRIPTION
Course covers the principles of care, maintenance, and operation of fire apparatus, equipment and pumps including maneuvering engines and ladder trucks, pump construction, pumping and pump accessories, power development and transmission, and apparatus testing. An overview of the properties of water, apparatus and appliances, fire streams, and hydraulic calculations (theoretical and practical) will be addressed to establish a functional understanding of fire ground hydraulics.

1. COURSE GOALS
   - 1.1 Introduce the students to fire apparatus evolutions and pump classifications currently in use in the fire service
   - 1.2 Initiate the student to the types of pumps used on fire apparatus, as well as the basic theory of pumping
   - 1.3 Gain knowledge in safe driving procedures for emergency vehicles, as well as common causes of accidents
   - 1.4 Present the student with basic apparatus maintenance programs and recognize potential problems
   - 1.5 Introduce the student to the various fire apparatus pump tests
   - 1.6 Familiarize the student with the principles involved with fire hydraulics
   - 1.7 Familiarize the student with calculations in fire streams and work with the formulas utilized to calculate hydraulic problems
   - 1.8 Introduce the importance of proper engine and nozzle pressures and friction loss calculations

2. OUTCOMES
   Upon satisfactory completion of this course, students will be able to:
   - 2.1 describe the fire apparatus evolutions that are currently in use by fire departments.
   - 2.2 recognize the types of fire pumps and basic pumping principles.
   - 2.3 recognize and apply safe driving procedures for ladder trucks and fire engines.
   - 2.4 identify basic apparatus maintenance programs and recognize potential problems.
   - 2.5 perform the different pump tests and describe aerial truck tests.
   - 2.6 utilize common terminology; describe the nature of fire, and how water is used as an extinguishing agent.
   - 2.7 explain water supply systems and how water supplies are used with apparatus and appliances.
   - 2.8 identify the importance and demonstrate methods of calculating friction loss for fire streams and various operations.
   - 2.9 demonstrate the use of practical and theoretical calculations for hydraulic problems.

3. METHODS OF INSTRUCTION
   - 3.1 Lecture
   - 3.2 Instructional technology

3.3 Classroom exercises and simulations

4. LEARNING ACTIVITIES
   - 4.1 Lectures
   - 4.2 Demonstrations
   - 4.3 Presentations
   - 4.4 Practical applications
   - 4.5 Field trips
   - 4.6 Class discussions

5. EVALUATION
   - 5.1 Written evaluations
   - 5.2 Assignments
   - 5.3 Class 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 AccessABILITY 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