

ARIZONA WESTERN COLLEGE
SYLLABUS

PIT 131 AMAZON WEB SERVICES CLOUD ARCHITECTING

Credit Hours: 3 Lec 2 Lab 2

PREREQUISITE: PIT 130

COURSE DESCRIPTION

Design patterns for architecting optimal IT solutions on AWS as well as troubleshooting AWS strategies and services.

1. COURSE GOAL

- 1.1 Design IT infrastructure on cloud computing with Amazon Web Services (AWS).
- 1.2 Prepare students for AWC Certified Solutions Architect-Associate certification.

2. OUTCOMES

Upon satisfactory completion of this course, students will be able to:

- 2.1 Describe the benefits of Amazon Web Services and the way cloud services transform IT systems.
- 2.2 Integrate the principles when migrating or designing new applications for the cloud, including security, reliability, high-performance, and cost efficiency.
- 2.3 Identify the design patterns and architectural options applied in a variety of use cases.
- 2.4 Configure systems for high availability, fault tolerance, scalability, and how to avoid single points of failure.
- 2.5 Identify the benefits of Infrastructure as Code.
- 2.6 Create, manage, provision, and update related resources using AWS CloudFormation to support automation.
- 2.7 Articulate the importance of making systems highly cohesive and loosely coupled to support the distributed nature of applications built for the cloud.
- 2.8 Compare structured query language (SQL) databases with NoSQL databases for storing and deploying web-accessible applications.
- 2.9 Evaluate the business impact of design decisions and how the AWS Well-Architected Framework improves cloud-based architectures.
- 2.10 Apply design principles and best practices of the Operational Excellence pillar.
- 2.11 Utilize the appropriate tools and services to provide security-focused content at every layer in the application.
- 2.12 Apply design principles and best practices of the Reliability pillar.
- 2.13 Select storage, compute, database, and networking resources to improve performance and evaluate metrics for applications.
- 2.14 Demonstrate best practices to eliminate unneeded costs or suboptimal resources.
- 2.15 Troubleshoot common errors when deploying or modifying Amazon Web Services.

3. METHODS OF INSTRUCTION

- 3.1 Lecture

- 3.2 Multi-media Presentations
- 3.3 Group Discussions

4. LEARNING ACTIVITIES

- 4.1 Group Discussions
- 4.2 Digital Presentations
- 4.3 Interactive Virtual Practice

5. EVALUATION

- 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 Classroom Assignments: Students are responsible for work missed and for completing all work before the next class meeting. Students are responsible for participating in all oral drills and for taking all exams.
- 6.3 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.
- 6.4 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.
- 6.5 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.
- 6.6 Textbooks and materials: Students are required to bring notebook or looseleaf book, pens, pencils, dictionaries, and purchase textbook required for class.
- 6.7 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