

Arab Academy for Science and Technology and Maritime Transport
Computer Science Curriculum
Course Syllabus

Course Code: CS428	Course Title: Cloud Computing	Classification: E	Coordinator's Name: Prof. Mohamed Shaheen Lecturer: Dr. Mohamed Magdy	Credit Hours: 3
Pre-requisites: <ul style="list-style-type: none"> • CS322 (Operating Systems) • CE231 (Introduction to Networks) 	Co-requisites: None	Schedule: Lecture: 2 hours Tutorial-Lab: 2 hours		
Office Hours: (Room 305) Sunday 12:30 a.m. -2:30 p.m. Monday 12:30 a.m. -2:30 p.m				
Course Description: This course covers how to build a cloud infrastructure based on a cloud computing reference model. The reference model includes five fundamental layers, namely, physical, virtual, control, orchestration, and service and three cross-layer functions, namely, business continuity, security, and service management for building a cloud infrastructure. For each layer and function, this course covers the comprising technologies, components, processes, and mechanisms. This course follows an open approach to describe concepts and technologies. However, EMC-related product examples are included to reinforce the concepts and technologies learnt in this course. This course follows the U.S. National Institute of Standards and Technology as a guide for all definitions of cloud computing. After completing this course, the participants will acquire knowledge to make informed decisions on technologies, processes, and mechanisms that are required to build cloud infrastructure.				
Textbook: <i>Cloud Computing: Concepts, Technology & Architecture</i> , Thomas Erl, Ricardo Puttini, Zaigham Mahmood, ISBN-10: 0133387526 • ISBN-13: 9780133387520				
References: <i>Cloud Infrastructure and Services: Virtualization and Cloud Infrastructure Technology Concepts and Principles</i> , by EMC Education Services (Author).				
Course Objective: <ol style="list-style-type: none"> 1. Describe cloud computing, cloud deployment models, and cloud service models 2. Describe the reference model and the key considerations to build a cloud infrastructure 		(SO 1)		

<p>3. Describe the key components and processes required to build the physical, virtual, control, orchestration, and service layers of a cloud infrastructure</p> <p>4. Describe the business continuity, security, and service management functions of a cloud infrastructure</p> <p>Analyze process data and propose improvements</p>	(SO 6)
<p>Contribution to Program Student Outcomes:</p> <p><u>Outcome 1:</u> Analyse a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.</p> <p><u>Outcome 6:</u> Apply computer science theory and software development fundamentals to produce computing-based solutions.</p>	
<p>Course Outline:</p> <ol style="list-style-type: none"> 1. Introduction to Cloud Computing 2. Building the Cloud Infrastructure 3. Physical Layer-1 4. Physical Layer-2 5. Virtual Layer-1 6. Virtual Layer-2 7. 7th exam 8. Control Layer 	<ol style="list-style-type: none"> 9. Service Orchestration Layers 10. Service Layers 11. Business Continuity 12. 12th exam 13. Security 14. Service Management 15. Revision 16. Final Exam
<p>Grade Distribution:</p> <p>7th Week Assessment (30%): Exam (20%) + Assignments 10%</p> <p>12th Week Assessment (20%): Exam (15%) + Assignments 5%</p> <p>Year Work (10%): Project (10%)</p> <p>Final Exam (40%)</p>	
<p>Policies:</p> <p>Attendance: AASTMT Education and Study Regulations (available at aast.edu)</p> <p>Academic Honesty: AASTMT Education and Study Regulations (available at aast.edu)</p> <p>Late Submission: <i>Late submissions are graded out of 75% (1 week late)</i></p>	