

1. Course Name:	
Cloud Computing	
2. Course Code:	
3. Semester / Year: 2025-2026	
Semester	
4. Description Preparation Date:	
17-11-2025	
5. Available Attendance Forms:	
Weekly (Theory: 2 TUT :1)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
Theory: 30 Hours Total: 60 hours Total Units: 6	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Faisal Ghazi Bdiwi Email: faisal.ghazi@muc.edu.iq	
8. Course Objectives	
Course Objectives	1. Study the main concepts of cloud computing and the five main attributes o 2. Learn the services (layers) of cloud (SaaS,Paas, IaaS) 3. Provide the students with explanation of virtualization and types of cloud models. 4. Study the web technologies of cloud, benefits, challenges, limitations, features. 5. Learn Aspects of Data Security: storage,confidentiality,privacy.
9. Teaching and Learning Strategies	
Strategy	The main strategies that will be adopted in delivering this module are:- 1-Using theoretical and practical tools in analyzing and implementing database systems 2-Using modern means of communication to interact with the work team to solve a spe problem 3-The ability to manage time while working as a team 4-Documenting the stages of building systems to be able to check and correct errors in the system
1. Course Structure	
Week	Required Learning Outcomes
1	-Introduction to Cloud computing, examples of cloud services, phases of cloud paradigm, definition and five attributes of cloud computing.
2	Types of Cloud Services (Cloud Layers):SaaS, key benefits of SaaS,,PaaS,IaaS, Features available for typical IaaS system
3	Cloud computing Types or Deployment Models:public,private,hybrid,community
4	Enabling Technologies , Cloud Computing Benefits, Limitations of Cloud Computing,
5	-Cloud Computing Features, Challenges and Risks of cloud computing,
6	Virtualization, objectives to virtualization, Types of Virtualization: Server Virtualization, Hardware Virtualization, Network Virtualization
7	-Storage Virtualization, Application Server Virtualization, Application virtualization, Data Virtualization, Desktop Virtualization

8	Nested Virtualization, Memory Virtualization, Aspects of Data Security, Data Security Mitigation, Provider Data and Its Security, storage, confidentiality, integrity, availability.
9	-Security Management Standards, Security Management in the Cloud, Availability Management, Factors Impacting Availability,
10	-SaaS Availability Management, PaaS Availability Management, IaaS Availability Management
11	Access Control, Access Control in the Cloud, Access Control: SaaS, Access Control: PaaS, Access Control: IaaS
12	-Security Configuration Management, What Is Privacy?, What Is the Data Life Cycle?, generation of data, use, transfer, transformation, storage, archival, destruction
13	What Are the Key Privacy Concerns in the Cloud? Who Is Responsible for Protecting Privacy? Change to Privacy Risk Management and Compliance in Relation to Cloud Computing: • Collection Limitation Principle • Use Limitation Principle • Security Principle • Retention and Destruction Principle • Transfer Principle • Accountability Principle • Multi-Tenancy
14	-Importance of multi-tenancy, Types of multi-tenant architecture, Advantages and Disadvantages of multi-tenancy, Secure Separation / Isolation Strategies, Network Separation, Compute Separation, Storage Separation, Application Tier Separation
15	Mid Term Exam

2. Learning and Teaching Resources

1. Study the main concepts of cloud computing and the five main attributes of cloud computing. 2. Learn the services (layers) of cloud computing (SaaS, PaaS, IaaS). 3. Provide the students with explanation of virtualization and types of cloud models. 4. Study the technologies of cloud, benefits, challenges, limitations, features. 5. Learn Aspects of Data Security: storage, confidentiality, privacy. 6. Study Security Management Standards, SaaS Availability Management, PaaS Availability Management, IaaS Availability Management. 7. Study Access Control in the Cloud, Data Life Cycle in cloud. 8. Knowing the Responsibility for Protecting Privacy.

Course Description Form