

# MIS 6363.0W1 – Online Course Syllabus

## Course Information

<i>Course Number/Section</i>	MIS 6363.0W1- Online
<i>Course Title</i>	Cloud Computing Fundamentals
<i>Term</i>	Summer 2024

## Professor Contact Information

<i>Professor</i>	Engin Calisir
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<i>Office Location</i>	JSOM 2.313
<i>Online Office Hours</i>	Mondays between 1:00pm to 4:00pm <a href="#">by appointment</a>

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**Course Pre-requisites, Co-requisites, and/or Other Restrictions** There is no Prerequisite for this class.

## Course Description

MIS 6363 Cloud Computing Fundamentals (3 semester credit hours) This course is designed as a primer for cloud computing which many believe is the third major wave of computing, after mainframe and client-server computing. The course examines this technology from a business perspective. The course is designed to deliver a holistic and balanced view of the business model, technological infrastructure, and security issues of cloud computing useful for the technology student to understand the business challenges and the business student to understand the technology challenges. (3-0) R

## Student Learning Objectives/Outcomes

Completing this course will provide a good understanding of cloud computing, virtualization and their fundamental technologies, architecture, and security. I will be providing a solid foundation for business-related cloud-computing needs.

After successfully finishing this class, you should be able to:

- Provide the appropriate cloud computing requirements for business
- Understand terms and methodologies every student will need to navigate the cloud
- Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, and hybrid cloud.
- Explain the core issues of cloud computing such as security, privacy, and interoperability
- Ability to implement, deliver and maintain cloud technology and infrastructure

## Required Textbooks and Materials

### *Required Materials*

Course materials will be available on e-learning. Please read all the assigned course materials before class time

## **Suggested Course Materials (not Required)**

### *Suggested Readings/Texts*

1. Cloud Computing :(The MIT Press Essential Knowledge Series): The MIT Press Essential Knowledge Series Paperback – May 13, 2016 by Nayan B. Ruparelia ,Ralph Retter, Walter Schupeck , Peter Arbitter
2. The basics of cloud computing: understanding the fundamentals of cloud computing in theory and practice: Rountree, Derrick.; Castrillo, Ileana.; Jiang, Hai
3. Cloud Governance and Management Made Simple –Lita Fulton
4. Learning Docker: Second Edition Jeeva S. Chelladhuai , Vinod Singh, Pethuru Raj
5. Additional course materials will be available on e-learning. Please read all the assigned course materials before the class time.

Textbooks and some other bookstore materials can be ordered online or purchased at the [UT Dallas Bookstore](#).

## **Technical Requirements**

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the [Getting Started with eLearning](#) webpage.

## **Course Access and Navigation**

This course can be accessed using your UT Dallas NetID account on the [eLearning](#) website.

Please see the course access and navigation section of the [Getting Started with eLearning](#) webpage for more information.

To become familiar with the eLearning tool, please see the [Student eLearning Tutorials](#) webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The [eLearning Support Center](#) includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

## **Communication**

This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the [Student eLearning Tutorials](#) webpage for video demonstrations on eLearning tools.

Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

## **Distance Learning Student Resources**

Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the [eLearning Current Students](#) webpage for more information.

### Server Unavailability or Other Technical Difficulties

The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online [eLearning Help Desk](#). The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

### Academic Calendar

WEEK/ DATES	MODULE	READING	ASSESSMENT / ACTIVITY	DUE DATE
1 May28 to June 2	Module 1: Virtualization Essentials	VMware Virtualization		
2 May28 to June 2	Module 1: Software Defined Architecture (SDDC, SDN, SDS)	VMware SDDC Whitepaper		
3 June 3 to June 9	Module 2: Cloud Computing Actors and Essentials Characteristics	NIST-800145 NIST- SP500292		
4 June 3 to June 9	Module 3: Cloud Models AWS Global Infrastructure Quiz 1 (week 1-4)	21-AWS Overview	Lab0a- AWSManagement Console &Global infrastructure  Lab0b: Billing Alerts and SNS (for Free-Tier)	Quiz 1: June 9 <sup>th</sup> (Sunday) between 2:00pm- 11:59pm CST
5 June 10 to June 16	Module 4: Cloud Networking; Amazon CloudFront	IPv4 Addressing and Subnetting Paper 40.VPC paper	Lab2: Network Setup Private Cloud (VPC NAT, IGW)	Due: Lab01a &Lab01b June 16 <sup>th</sup> , 11:59pm CST

6 June 17 to June 23	Module 5: Cloud-Based Storages EBs, EFS, S3 Disaster Recovery	12-AWS-S3-FAQs	Lab3: AWS Storage Practices (S3, EBS, EFS, Glacier)	<b>Due: Lab2 June 23<sup>th</sup>, 11:59pm CST</b>
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WEEK/ DATES	MODULE	READING	ASSESSMENT / ACTIVITY	DUE DATE
7 June 24 to June 30	Module 6: Cloud-Based Computing	8-AWS EC2 FAQs	Lab5: AWS Virtual Machines (EC2, AMIs)	<b>Due: Lab3 June 30<sup>th</sup> 11:59pm CST</b>
8 July 1 to July 7	Module 6: Cloud-Based Compute <b>Quiz 2 (week 5-8)</b>	7-Aws-Ec2 Auto scaling FAQs		<b>Quiz 2: July 7<sup>nd</sup> (Sunday) between 2:00pm-11:59pm CST</b>
9 July 8 to July 14	Module 7: Cloudbased Databases RDS- NoSQL	10-AWS-RDS-FAQs	Lab4: AWS Database Practices (RDS, SQL Server, DynamoDB)	<b>Due: Lab5 July 14<sup>th</sup> 11:59pm CST</b>
10 July 15 July 21	Module 8: Identity and Access Management (IAM)  <b>Quiz 3 (week 9-10)</b>	30.AWS-AIM	Lab6: Introduction to AWS Identity and Access Management (IAM)	<b>Due: Lab4 July 21<sup>th</sup>, 11:59pm CST</b>  <b>Quiz 3: July 21<sup>rd</sup> (Sunday) between 2:00pm-11:59pm CST</b>
11 July 22 July 28	Module 9: Cloud Security		Lab7: Hosting a Static Website Using Amazon Simple Storage Service (Amazon S3) Lab8: Build a Serverless Web Application	<b>Due: Lab6 July 28<sup>th</sup>, 11:59pm CST</b>

12 July 29 August 4	Module 10: Auto Scaling and Monitoring		Additional Reading for exam Prep:  1.AWS Well Architecture Framework  20.AWS Cloud Adaptations Framework	<b>Due: Lab7 August 4<sup>st</sup>, 11:59pm CST</b>
Exam Day	<b>Final Exam (week 1-15 ) Comprehensive August 9<sup>th</sup> (Friday)</b>			<b>Final Exam: August 9<sup>th</sup> (Friday) between 2:00pm- 11:59pm CST</b>

**Exam Proctoring:** an online remote proctoring tool will be available for fully online courses at the discretion of the professor. Fully online courses may use remote proctoring software for exams in which a webcam scan of the testing area and the recording of all activity during the exam is required.

**Honorlock is required for the Quizzes and the Final Exam.** Information on the Honorlock tool can be found on the [Testing Center website](#).

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### Class Materials

The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

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### Class Participation

Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

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## Grading Policy

Final Exam:	42 points	94-100 A
Quizzes (10 points each x3)	30 points	90-93 A-
Labs (4 points each x7)	28 points	87-89 B+
		83-86 B
		79-82 B-
		75-78 C+
		69-74 C
		Below 69
Total	100 points	

## Course Policies

### *Quizzes and Final Exams*

This course has 3 quizzes and 1 final exam.

Quizzes are small size final exams. The same format and preparation are required however their topics are limited coverage as shows in the syllabus

- Quiz 1 ○ Virtualization Essentials, VMware Virtualization ○ Software Defined Architecture (SDDC, SDN, SDS)
  - Cloud Computing Actors and Essentials Characteristics based on NIST-800-145 and NIST-SP500-292 white papers
  - Cloud Models, deployments, and price/support options ○ AWS Global Infrastructure
- Quiz 2:
  - AWS networking ○ Amazon CloudFront ○ Amazon S3 ○ Amazon EFS ○ Amazon EBS ○ AWS Disaster recovery options ○ AWS EC2
  - AWS Lambda
  - AWS ECS and Fargate and Container concept (for cluster)
- Quiz 3:
  - AWS -IAM
  - AWS -database and data lake services
  - AWS security services and shared responsibility models

The exam format is the same as the AWS certification exam format. There are two types of questions on the final exam and quizzes.

1. **Multiple choice:** Has one correct response and three incorrect responses.
2. **Multiple responses:** Has two or more correct responses out of five or more options.
3. **True/False**

### Final Exam Preparation

- a.) Remember all details on PowerPoints, especially architectural drawings which are designed by best practice and show you all components of service
- b.) Final Exam is practical experience. When you perform the labs, make sure you understand each configuration items and their meanings also you should be aware of why do you select /enable /disable etc. them, such as why you have to choose VPC when you are running EC2 or why do you need to choose security group for your EC2?
- c.) Must read all required papers and related AWS documentation from <https://docs.aws.amazon.com/index.html>
- d.) Final Exam examples [https://d1.awsstatic.com/training-and-certification/docs-cloudpractitioner/AWS-Certified-Cloud-Practitioner\\_Sample-Questions.pdf](https://d1.awsstatic.com/training-and-certification/docs-cloudpractitioner/AWS-Certified-Cloud-Practitioner_Sample-Questions.pdf)
- e.) Good reading about AWS certification exam can be found on the [AWS site](#).

All four are taken on eLearning using the Honorlock tool.

#### *Quiz/Exam Dates*

The quizzes and exam will be made available on the days/times listed below:

All times are based on Central time (CTS) please arrange your local time accordingly.

#### *Make-up exams*

**There will be no makeup exam.**

#### *Extra Credit*

*If you have already certified, you cannot get extra credit unless you take the exam and pass it again during the class period.*

**If you pass the AWS Certified Cloud Practitioner exam by August 1<sup>st</sup> and upload your certificate to eLearning, I can add 10 points to your final grade.**

#### *Late Work*

**Late Works will not be accepted.**

#### **Comet Creed**

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

*“As a Comet, I pledge honesty, integrity, and service in all that I do.”*

#### **Academic Support Resources**

The information contained in the following link lists the University’s academic support resources for all students.

Please go to [Academic Support Resources](#) webpage for these policies.

#### **UT Dallas Syllabus Policies and Procedures**

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus. Please review the catalog sections regarding the [credit/no credit](#) or [pass/fail](#) grading option and withdrawal from class.

Please go to [UT Dallas Syllabus Policies](#) webpage for these policies.

***The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.***