

Course Book

Course Description	<ul style="list-style-type: none"> • This course is designed to impart knowledge on cloud computing concepts with examples and applications. • Get an idea of GCC technologies, architecture, and infrastructure. • Understand about GCC deployment models. • Discuss GCC Service Models, CC Management, Data Storage, Virtualization, and Security. 			
Course objectives	<ul style="list-style-type: none"> • To learn about service-oriented architecture • To learn about virtualization • To understand the evolution of grid and cloud computing • To understand Cloud Computing models • To learn about software platforms available for cloud management. 			
Student's obligation	<p>The Students should be attendant in class at more than 1:30 hours during lecturing, and to pass this course should fulfill the following requirements:</p> <ol style="list-style-type: none"> 1. The absence should be less than 9%. 2. The student has to submit almost all the assignments, essays, and reports and also. 3. The student must pass the exams and quizzes which have been done during the study. <p>Activations & good behavior is essential in class for student, and also present seminar it is required.</p>			
Required Learning Materials	<ol style="list-style-type: none"> 1. Lectures 2. E-learning Methods 3. White Board 4. PPT Presentation 5. Team Work 6. Project Show (Practical Session) 10. Assignments 			
Evaluation	Task	Weight (Marks)	Due Week	Relevant Learning Outcome
	Paper Review			
As st.	Homework	5%	3-6-9-12	

	Class Activity	2%	Overall weeks	
	Report	5%	5	
	Seminar	10%	6	
	0	0		
	0			
	Quiz	8	Every week	Weekly outcomes
	Every week report	10	Overall weeks	
	Midterm Exam	25	12	
	Final Exam	40	15	All the outcomes
	Total	100		

Specific learning outcome:	After completing the course, students can:
	<ul style="list-style-type: none"> Utilize virtualization technologies. Recognize web services of the internet. Identification of Cloud computing Models. Ability to understand OpenStack tools.
	Ability to understand Open Nebula tools

Course References:	Course Reading List and References
	<ul style="list-style-type: none"> Book: Cloud Computing Bible, Barrie Sosinsky, Wiley Publication. Book: Mastering Cloud Computing, Rajkumar Buyya et.al, Morgan Kaufmann Publication. <p>Book: Cloud Computing: A Practical Approach, Anthony T. Velte et.al, McGraw Hill Publication.</p>

Course topics (Theory)	Week	Learning Outcome
Introduction to Grid Computing	1	Grid Computing
Virtual Organizations (VOs)	2	Virtualization
View of Grid Architecture	3	Architecture
Cloud Computing Basics: Overview, Planning	4	Cloud
Technologies, Architecture, Infrastructure	5	Infrastructure

Cloud Deployment Models: Public Cloud Model, Private Cloud Model	5	Public, Private
Hybrid Cloud Model, Community CloudModel	6	Hybrid Cloud
Cloud Service Models: Infrastructure as a Service (IaaS), Platform as aService (PaaS)	7	Service Models
Software as a Service (SaaS), Identity as aService (IdaaS)	8	Service Models
Network as a Service (NaaS)	9	Service Models
Cloud Advanced Concepts: Cloud Computing Management, CloudComputing Data Storage	11	Data Storage
Cloud Computing Virtualization, Cloud Computing Security	12	Cloud Computing security
Cloud Computing Operation, CloudComputing Applications	13	CloudComputing Applications
Cloud Computing Providers, CloudComputing Challenges	14	CloudComputing Challenges
Mobile Cloud Computing	15	Mobile Cloud

Questions Example Design

Q1/ Bring out the difference between private cloud and public cloud.

Public Cloud	Private Cloud
Multiple Clients	Single Clients
Hosted at providers location	Hosted at providers / organization location
Shared infrastructure	Private Infrastructure
Access over Internet	Access over Internet / Private network
Low cost	High cost
Less Secure	More Secure

Q2/ Why is Cloud computing important?

There are many implications of cloud technology, for both developers and end users.

For developers, cloud computing provides

- Increased amounts of storage
- Increased processing power
- Enables new ways to access information, process and analyze data

- Connect people and resources from any location anywhere in the world. For users,
- Documents hosted in the cloud always exist, no matter what happens to the user's machine.
- Users from around the world can collaborate on the same documents, applications, and projects, in real time.

Cloud computing does all this at lower costs, because the cloud enables more efficient sharing of resources than does traditional network computing

Q3/ What is Grid Computing?

Grid computing is the concept of distributed computing technologies for computing resource sharing among participants in a virtualized collection.

Q4/ What are the derivatives of grid computing?

There are 8 derivatives of grid computing. They are as follows:

- a) Compute grid
- b) Data grid
- c) Science grid
- d) Access grid
- e) Knowledge grid
- f) Cluster grid
- g) Terra grid
- h) Commodity grid

Q5/ What are the grid computing applications?

- Application partitioning that involves breaking the problem into discrete pieces.
- Discovery and scheduling of tasks and workflow.
- Data communications distributing the problem data where and when it is required.

Extra notes:

Dear Student...

As we know, there are some factors or reasons (the postponement of the study, Holidays, National holidays, Eids, etc.) that are causing the inability to study (15) lectures in the annual study (15 weeks). Therefore, to improve the scientific level and maintain the standardization for diploma programs in the field of IT, we will try to finish 80% of the prescribed curriculum in

(12) weeks rather than 15 weeks. This means we will try to take or study more subjects than what is prescribed to study every week.

External Evaluator

I have reviewed this course book, it's perfect and fit for this subject at the level of the college student, so I have no suggestion.

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