

# Faculty of Science

Bachelor of Computer Application (B.C.A.)

Semester: V

Paper: DSE-II

Subject: Cloud Computing

CO. No.	Course Outcomes	Cognitive Level
CO 1	Analyze the trade-offs between deploying applications in the cloud and over the local infrastructure.	U, R
CO 2	Compare the advantages and disadvantages of various cloud computing platforms.	U, R, Ap
CO 3	Program data-intensive parallel applications in the cloud.	U, Ap, C
CO 4	Analyze the underlying cloud technologies and software's performance, scalability and availability.	An, Ap, C
CO 5	Solve a real-world problem using cloud computing through group collaboration.	U, Ap, C

## Credit and Marking Scheme

	Credits	Marks		Total Marks
		Internal	External	
<b>Theory</b>	4	40	60	<b>100</b>
<b>Practical</b>	2	40	60	<b>100</b>
<b>Total</b>	<b>6</b>	<b>200</b>		

## Evaluation Scheme

	Marks	
	Internal	External
<b>Theory</b>	3 Internal Exams of 20 Marks (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of the Semester)
<b>Practical</b>	3 Internal Exams (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of the Semester)



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## Content of the Course Theory

No. of Lectures (in hours per week): 2 Hrs. per week

Total No. of Lectures: 60 Hrs.

Maximum Marks: 60

Units	Topics	No. of Lectures
Unit-I	Cloud Computing Fundamental:  Cloud Computing definition, Private, Public and Hybrid cloud types, IaaS, PaaS, SaaS, Benefits and challenges of cloud computing, public vs private clouds.	10
Unit-II	Basics of Service Management in Cloud Computing, Data Management in Cloud Computing.  Cloud Computing Architecture: Cloud Reference Model, Layer and Types of clouds, Architectural design of compute and storage clouds.	10
Unit-III	Overview of cloud Management and Virtualization:  Fundamental concept of compute, storage, networking, desktop and application virtualization, role of virtualization in enabling the cloud virtualization benefits, server virtualization, block and file level storage virtualization.	10
Unit-IV	Cloud Security:  Cloud Information security fundamentals, Cloud security services, Design principles, Secure Cloud Software requirements, Policy Implementation, Cloud Computing Security Challenges, Virtualization security management, Cloud Computing security architecture.	15
Unit-V	Market based management of Clouds, Federated Cloud/ Inter cloud: Characteristics and Definition, Cloud Federation Stack, Third Party cloud services.	15

## References

### Text Books:

- A. Srinivasan, J. Suresh, Cloud Computing
- Gautam Shroff, Enterprise Cloud Computing Technology Architecture Application
- Kumar Saurabh- Cloud Computing

### Reference Books:

- Dimitris N. Chorafas – Cloud Computing Strategies
- Buyya, Selvi – Mastering Cloud Computing
- Krutz, Vnes – Cloud Security



## List of Practical

1. Download and Install Virtual Machine (Virtual Box, VMware, and KVM)
2. Installing Virtual Machine
3. Controlling Virtual Machine (Start, restart, power off)
4. Editing Virtual Machine Hardware
5. Creating and Using Image Snapshots
6. Importing and Exporting Virtual Machine Images
7. Accessing Linux Command Line
8. Managing Files from the Command Line
9. Creating, Viewing, and Editing Text Files
10. Installing and Updating Software Packages



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