ANNEXURE I

MODULE-WISE COURSE CONTENT AND OUTCOME				
SL.NO	**MODULE NAME**	**MODULE CONTENT**	**MODULE LEARNING OUTCOME**	**DURATION (HRS)**
1	Introduction to Cloud Computing	- Overview of cloud computing concepts and benefits. - Cloud deployment models: public, private, hybrid. - Cloud service models: IaaS, PaaS, SaaS.	- Explain the fundamentals of cloud computing. - Distinguish between deployment and service models.	5
2	Cloud Service Providers Overview	- Introduction to AWS, Azure, and Google Cloud. - Comparative analysis of major cloud platforms.	- Identify features and services of leading cloud platforms. - Choose suitable platforms for specific applications.	5
3	Cloud Infrastructure Design	- Architecture principles for scalable and secure solutions. - Networking in the cloud and virtual private clouds (VPCs).	- Design secure and scalable cloud architectures. - Implement VPCs and related components.	5
4	Cloud Resource Management	- Monitoring and managing resources (CPU, storage, memory). Cost optimization techniques and tools.	- Monitor resource usage for efficiency. Apply cost-saving strategies while maintaining performance.	6

5	Cloud Security and Compliance	- Identity and access management (IAM). - Encryption and data protection strategies. - Compliance standards (ISO, GDPR, etc.).	- Implement security measures for cloud infrastructures. - Evaluate and ensure compliance with industry standards.	6
6	Automation and CI/CD in Cloud	- Automation tools (Terraform, CloudFormation). - CI/CD pipelines for application deployment and updates.	- Automate cloud deployments using industry-standard tools. - Integrate CI/CD pipelines for continuous improvement.	6
7	Cloud Applications and Case Studies	- Real-world applications: IoT, big data, AI/ML in the cloud. - Case studies on cloud migrations and optimizations.	- Apply cloud concepts to solve real-world problems. - Analyze successful cloud implementations.	6
8	Capstone Project	- nd-to-end implementation of a cloud solution. - Involving architecture design, deployment, and automation.	- Demonstrate the ability to design and execute a complete cloud solution. - Present project findings professionally.	6

ANNEXURE II

OVERALL COURSE LEARNING OUTCOME ASSESSMENT CRITERIA AND USECASES			
Learning Outcome	**Assessment Criteria**	**Performance Criteria**	**Use Cases**
Distinguish and analyze cloud computing models (IaaS, PaaS, SaaS) and their applications.	Ability to compare cloud models and their use cases.	- - Explain the differences and use cases of IaaS, PaaS, and SaaS. - Choose suitable models for applications.	-Cloud-based CRM system, Website hosting.
Design and implement scalable, secure, and cost-effective cloud infrastructures using AWS, Azure, or GCP.	Demonstrate knowledge of cloud architecture and security design.	Design architecture for scalability. - Implement VPCs, load balancers, and security groups.	E-commerce platform architecture, Real-time data processing.
Optimize and manage cloud resources for efficiency, performance, and cost-effectiveness.	Proficiency in monitoring, management, and cost optimization techniques.	-Optimize resource allocation and reduce cloud bills.	Media streaming service optimization, Storage cost reduction.
Evaluate cloud security practices and compliance with industry	Understanding of IAM, encryption, and compliance standards.	Implement secure IAM policies. -Encrypt sensitive data and follow GDPR/ISO	Data compliance in healthcare, Secure financial data storage.

standards.		guidelines.	
Automate deployments and integrate CI/CD pipelines for continuous improvement.	Proficiency in using tools like Terraform and Jenkins.	- Deploy automated infrastructure setups. - Implement CI/CD pipelines for seamless deployment.	Automated application deployment, Agile project updates.

LIST OF FINAL PROJECTS (10 PROJECTS THAT COMPREHENSIVELY COVER ALL THE LEARNING OUTCOME)	
SL.NO	**FINAL PROJECT**
1	Scalable E-Commerce Platform Deployment.
2	Cloud Resource Optimization for Cost Efficiency.
3	Real-Time Data Processing with IoT on the Cloud.
4	Implementing a Secure Cloud-Based Healthcare Application.
5	Cloud Migration of a Legacy System.
6	Disaster Recovery Setup in AWS.
7	CI/CD Pipeline Implementation for Web Applications.
8	IoT-Based Smart Home Solution with Cloud Integration.
9	AI/ML Model Deployment Using Cloud Services.
10	Big Data Analytics Pipeline on Google Cloud.

ANNEXURE III

COURSE ASSESSMENT RUBRICS (TOTAL MARKS: 70)				
ASSESSMENT CRITERIA	**DESCRIBE THE CRITERIA OF THE BELOW CATEGORY PERFORMANCE**			**TOTAL MARKS**
	FAIR	**GOOD**	**EXCELLENT**	
MCQ/ Programming/ Project Submission Round	Above 40	Above 55	Above 65	70

Category	**Assessment Criteria**	**Performance Levels**	**Weightage (Marks)**
Practical Skills Proficiency	Demonstrates the ability to design, deploy, and manage cloud infrastructures effectively using AWS, Azure, or Google Cloud.	Fair, Good, Excellent	20
Technical Knowledge Application	Applies learned concepts to create scalable, secure, and cost-effective cloud solutions.	Fair, Good, Excellent	10

Category	Assessment Criteria	Performance Levels	Weightage (Marks)
Project Execution	Completes assigned projects with innovative approaches, technical accuracy, and relevance to industry needs.	Fair, Good, Excellent	30
Communication and Reporting	Presents project outcomes professionally using clear, concise documentation and visual representations.	Fair, Good, Excellent	10