Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Institute of Management Studies
Semester-7 (BBA)

Subject: Cloud Computing in Financial Services– BBAFT17403

Type of course: Major (Core)

Prerequisite:
Students should have basic understanding of financial services, banking operations, and information technology concepts. Familiarity with digital platforms and databases will be beneficial.

Rationale:
This course equips students with knowledge of cloud technologies and their transformative role in financial services such as banking, insurance, and fintech platforms. It focuses on practical applications, security, and regulatory aspects essential for digital financial ecosystems.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
				SEE		CCE			
CI	T	P	C	Theory	Practical	MSE	LWA	ALA	
3	0	2	4	75	25	30	20	50	200

Legends: CI-Classroom Instructions; T – Tutorial; P - Practical; C – Credit; SEE - Semester End Evaluation; MSE- Mid Semester Examination; LWA- Lab Work Assessment V – Viva; CCE-Continuous and Comprehensive Evaluation; ALA- Active Learning Activities.

3 Credits * 25 Marks = 75 Marks (each credit carries 25 Marks) Theory
1 Credits * 25 Marks = 25 Marks (each credit carries 25 Marks) Practical
SEE 100 Marks will be converted in to 50 Marks
CCE 100 Marks will be converted in to 50 Marks
It is compulsory to pass in each individual component.

Course Content:

Sr. No	Course Content	Hrs	% Weightage
1	**Fundamentals of Cloud Computing in Finance** • Introduction to Cloud Computing: Concept, evolution, and significance • Cloud vs Traditional IT in financial services • Service Models: IaaS, PaaS, SaaS • Deployment Models: Public, Private, Hybrid Cloud • Role of cloud in BFSI sector (banking, insurance, fintech startups) • Benefits: scalability, cost efficiency, accessibility • Challenges: latency, vendor lock-in, data privacy • Case examples: digital banking, payment systems	15	25
2	**Cloud Architecture, Platforms and Financial Applications** • Cloud architecture: virtualization, containers, microservices • Cloud infrastructure components: compute, storage, networking • Overview of platforms: AWS, Microsoft Azure, Google Cloud • Cloud-based financial applications: • Core banking systems • Payment gateways and wallets • Algorithmic trading platforms • APIs and open banking (API banking ecosystem) • Fintech integration with cloud	15	25
3	**Cloud Security, Risk and Regulatory Framework** • Importance of security in financial cloud systems • Data security: encryption, identity & access management (IAM) • Cybersecurity threats in cloud-based finance • Compliance and regulations (RBI guidelines, GDPR basics) • Risk management in cloud computing • Disaster recovery and business continuity planning • Ethical issues in cloud-based financial services	15	25

4	**Advanced Applications and Future Trends in Fintech Cloud** • Cloud migration strategies in financial institutions • Cloud-based analytics and big data in finance • Integration with AI, Blockchain, and IoT • Cloud for digital payments, neo banks, and robo-advisors • Cost optimization and cloud governance • Case studies: fintech startups using cloud • Future trends: serverless computing, quantum computing, sustainable cloud	15	25

Sr. No	Practical	Unit no	App hours
1	Introduction to Cloud Platforms Students will create free-tier accounts on AWS/Azure/GCP and explore the dashboard, services, and interface.	1	2
2	Service Models (IaaS, PaaS, SaaS) Students will identify and document real-world examples of IaaS, PaaS, and SaaS used in financial services and prepare a comparison table.	1	2
3	Cloud Deployment Models Students will analyze public, private, and hybrid cloud models by studying financial institutions and preparing a short report.	1	2
4	Case Study – Cloud in BFSI Students will study a case (e.g., digital banking or UPI system) and present how cloud computing is used in financial services.	1	2
5	Virtual Machines and Storage Students will launch a virtual machine (EC2/Azure VM) and configure basic storage settings.	2	2
6	Cloud Storage Services Students will create and manage cloud storage buckets (AWS S3/Azure Blob) and upload/download financial datasets.	2	2
7	Introduction to APIs in Finance Students will explore a simple financial API (e.g., stock price API) and understand API responses using tools like Postman.	2	2
8	Cloud-Based Financial Application Study Students will analyze a fintech app (payment wallet or banking app) and map its cloud architecture components.	2	2
9	Identity and Access Management (IAM) Students will create users, roles, and permissions in AWS/Azure IAM and understand access control.	3	2
10	Data Security and Encryption Students will enable encryption for storage services and understand basic data protection mechanisms.	3	2

11	Risk Analysis in Cloud Systems Students will identify potential risks in a cloud-based banking system and prepare a risk assessment report.	3	2
12	Compliance and Regulatory Case Study Students will study RBI/cloud compliance guidelines and prepare a summary of key regulations applicable to financial institutions.	3	2
13	Cloud Migration Strategy Students will design a basic cloud migration plan for a traditional bank shifting to cloud infrastructure.	4	2
14	Cloud Analytics in Finance Students will use cloud-based tools (or demo datasets) to perform basic financial data analysis (upload, visualize, interpret).	4	2
15	Mini Project – Cloud-Based Fintech Solution Students will design and present a simple cloud-based fintech solution (e.g., digital payment system, loan processing app) including architecture diagram.	4	2
	Total		30

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Cloud Service Identification:** Students will identify any one financial service (online banking, mobile wallets, or stock trading apps) and write 5 points on how cloud computing is used in it. They will upload the PDF on GMIU Web Portal.	10
2	**Cloud Platform Exploration:** Students will explore any cloud platform (Google Cloud, AWS, or Microsoft Azure) and list 4–5 services useful for financial institutions. They will upload the PDF on GMIU Web Portal.	10
3	**Field Visit – Bank Digital Services:** Students will visit a nearby bank and observe digital services (ATM, mobile banking, internet banking). They will write 5 points on how these services may use cloud technology and upload the PDF on GMIU Web Portal.	10
4	**Cloud Security Awareness:** Students will list 4–5 basic security features used in cloud-based financial services (encryption, passwords, OTP, data backup). They will upload the PDF on GMIU Web Portal.	10
5	**Case Example of Cloud in Banking:** Students will find one example of a bank or fintech company using cloud technology and write 5–6 lines about it. They will upload the PDF on GMIU Web Portal.	10
Total		50

Suggested Specification table with Marks (Theory): 75

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	30%	30%	20%	10%	10%	0%

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Understand core cloud concepts and their relevance in financial services.
CO2	Analyze cloud platforms and their application in financial systems and fintech solutions.
CO3	Evaluate security, risk, and regulatory issues in cloud-based financial services.
CO4	Assess advanced cloud applications and emerging trends shaping the future of financial services.

Instructional Method:

The course delivery method will depend upon the requirement of content and the needs of students. The teacher, in addition to conventional teaching methods by black board, may also use any tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction. Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses. The internal evaluation will be done on the basis of Active Learning Assignment.

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in the laboratory.

Reference Books:

[1] Erl, T., Puttini, R., & Mahmood, Z. (2013). Cloud computing: Concepts, technology & architecture. Pearson.
[2] Buyya, R., Broberg, J., & Goscinski, A. (2011). Cloud computing: Principles and paradigms. Wiley.
[3] Bragg, R., & Rhodes-Ousley, M. (2014). Cloud security and privacy. O'Reilly Media.
[4] Chishti, S., & Barberis, J. (2016). The fintech book: The financial technology handbook for investors, entrepreneurs and visionaries. Wiley.
[5] Thomas, A., & Dhillon, G. (2019). Fintech and the remaking of financial institutions. Academic Press.