LECTURE PLAN FOR CLOUD COMPUTING HSSC I

Branch Name: _____

Date For Start of Session: _____

Lecture #	Contents	SLO Reference
1	The teacher will explain cloud computing and its definition. The teacher will describe the fundamental concepts of cloud computing, including cloud models and types.	[SLO: CC-11-A-01]
2	The teacher will explain the key concepts of cloud computing, emphasizing its importance in modern technology.	[SLO: CC-11-A-02]
3	The students will perform research on future trends in cloud computing, focusing on emerging technologies and applications.	[SLO: CC-11-A-02]
4	The teacher will explain the evolution of cloud computing and its milestones. The teacher will elaborate on virtualization and grid computing.	[SLO: CC-11-A-03]
5	The teacher will discuss how cloud computing enables scalability, flexibility, and cost-efficiency for businesses.	[SLO: CC-11-A-04]
6	The students will perform practical work by researching the history and milestones in cloud computing.	[SLO: CC-11-A-03]
7	The teacher will describe the virtualization concept and its role in cloud computing. The teacher will explain key milestones in cloud evolution.	[SLO: CC-11-A-03]
8	The teacher will explain how cloud service providers emerged and the competitive landscape.	[SLO: CC-11-A-04]
9	The students will perform practical work by comparing and analyzing the benefits of cloud computing.	[SLO: CC-11-A-04]
10	The teacher will summarize cloud computing service models, including IaaS, PaaS, and SaaS, with real-world examples.	[SLO: CC-11-A-01]
11	The teacher will explain different layers of internet connectivity in client-server communication.	[SLO: CC-11-B-01]
12	The teacher will explain the role of servers in modern computing.	[SLO: CC-11-B-02]
13	The students will perform practical work by exploring different types of servers, including file servers and web servers.	[SLO: CC-11-B-03]
14	The teacher will explain the different types of databases used in cloud computing (relational, non-relational, key-value).	[SLO: CC-11-B-04]
15	The students will perform practical work by setting up and using databases, such as MySQL and MongoDB.	[SLO: CC-11-B-04]
16	The teacher will explain the OSI model and its relevance in network communication for cloud computing.	[SLO: CC-11-B-05]
17	The teacher will explain the differences between transport protocols like TCP and UDP.	[SLO: CC-11-B-06]
18	The students will perform practical work by analyzing network traffic using TCP/UDP protocols.	[SLO: CC-11-B-06]
19	The teacher will describe application layer protocols such as HTTP and SMTP.	[SLO: CC-11-B-07]
20	The students will perform practical work by working with HTTP and SMTP to send and receive messages.	[SLO: CC-11-B-07]

21	The teacher will discuss the cloud computing model, focusing on service providers like AWS, GCP, and Azure.	[SLO: CC-11-B-08]
22	The teacher will describe the role of productivity tools in the cloud environment.	[SLO: CC-11-C-01]
23	The teacher will explain Notion's interface, functionalities, and workspace organization.	[SLO: CC-11-C-02]
24	The students will perform practical work by using Notion for project planning, task management, and tracking progress through boards and lists.	[SLO: CC-11-C-03]
25	The teacher will explain how to collaborate effectively on shared Notion documents using comments, mentions, and version history.	[SLO: CC-11-C-04]
26	The students will perform practical work by collaborating on a Notion document and tracking progress.	[SLO: CC-11-C-04]
27	The teacher will introduce Canva and its templates for creating visually appealing graphics.	[SLO: CC-11-C-05]
28	The students will perform practical work by creating graphics using Canva templates and elements.	[SLO: CC-11-C-05]
29	The teacher will explain the benefits of delivering presentations in a collaborative environment.	[SLO: CC-11-C-06]
30	The students will perform practical work by building presentations using Pitch, Canva, and Notion.	[SLO: CC-11-C-06]
31	The teacher will explain the importance of effective online communication and collaboration.	[SLO: CC-11-C-08]
32	The teacher will describe the Slack and Discord interfaces and their features.	[SLO: CC-11-C-09]
33	The students will perform practical work by navigating the interfaces of Slack and Discord, including channels and direct messages.	[SLO: CC-11-C-09]
34	The teacher will explain the concept of servers, channels, and roles in Discord, and workspaces, channels, and direct messages in Slack.	[SLO: CC-11-C-10]
35	The students will perform practical work by collaborating on Slack and Discord, including file sharing and team coordination.	[SLO: CC-11-C-10]
36	The teacher will discuss the concept of file sharing and its significance in modern digital collaboration.	[SLO: CC-11-C-12]
37	The students will perform practical work by using Dropbox and WeTransfer for file sharing and collaboration.	[SLO: CC-11-C-12]
38	The teacher will explain the purpose and features of Google Workspace and Microsoft 365 for collaborative work.	[SLO: CC-11-C-14]
39	**Preparation For 1st Term Exams**	
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41-50	**1st Term EXAMS**	—
51	The students will perform practical work by creating documents and spreadsheets using Google Docs and Sheets.	[SLO: CC-11-C-16]
52	The teacher will describe how to use Google Meet for synchronous communication and virtual meetings.	[SLO: CC-11-C-15]
53	The students will perform practical work by participating in a Google Meet session and collaborating in real-time.	[SLO: CC-11-C-15]

54	The teacher will compare the collaborative features of Google Workspace, Microsoft 365, Notion, Pitch, and Discord.	[SLO: CC-11-C-17]
55	The teacher will define serverless architecture and its advantages in cloud computing.	[SLO: CC-11-D-01]
56	The teacher will explore modern PaaS platforms such as Replit, Heroku, and Firebase.	[SLO: CC-11-D-02]
57	The students will perform practical work by exploring PaaS platforms and understanding their use cases.	[SLO: CC-11-D-02]
58	The teacher will introduce Supabase and its features for building web applications.	[SLO: CC-11-D-03]
59	The students will perform practical work by creating a project in Supabase and setting up a PostgreSQL database.	[SLO: CC-11-D-04]
60	The teacher will explain how to build a simple web application using HTML, CSS, and JavaScript.	[SLO: CC-11-D-05]
61	The students will perform practical work by building a basic web application using HTML, CSS, and JavaScript.	[SLO: CC-11-D-05]
62	The teacher will explain how to integrate Supabase with JavaScript for web applications.	[SLO: CC-11-D-06]
63	The students will perform practical work by integrating Supabase into their web application for database interactions.	[SLO: CC-11-D-06]
64	The teacher will introduce Flask for Python and explain how it works for serverless applications.	[SLO: CC-11-D-09]
65	The students will perform practical work by setting up a Flask application and handling HTTP requests.	[SLO: CC-11-D-11]
67	The teacher will explain how serverless functions can simplify application deployment.	[SLO: CC-11-D-10]
68	The students will perform practical work by creating serverless functions using Flask on Replit.	[SLO: CC-11-D-10]
69	The teacher will explain how to build a task management API using Flask.	[SLO: CC-11-D-12]
70	The students will perform practical work by building a task management CRUD API with Flask.	[SLO: CC-11-D-12]
71	The teacher will discuss the advantages of using cloud services like Supabase for task management applications.	[SLO: CC-11-D-08]
72	The students will perform practical work by building a task management application with Supabase.	[SLO: CC-11-D-08]
73	The teacher will explain how virtual machines (VMs) are used in cloud environments for computing tasks.	[SLO: CC-11-E-01]
74	The students will perform practical work by creating and configuring VMs on GCP.	[SLO: CC-11-E-01]
75	The teacher will explain the components of a virtual machine, including CPU, memory, and storage.	[SLO: CC-11-E-01]
76	The students will perform practical work by setting up and managing VMs on Google Cloud Platform (GCP).	[SLO: CC-11-E-01]
77	The teacher will explain how to securely expose virtual machines to the internet.	[SLO: CC-11-F-01]
78	The students will perform practical work by securing VMs and managing network access.	[SLO: CC-11-F-01]
79	**Preparation For 2nd Term Exams**	

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81-90	**2nd Term EXAMS**	
91	The teacher will discuss load balancing in cloud computing and its importance for scalability.	[SLO: CC-11-F-02]
92	The students will perform practical work by setting up load balancing in GCP for web servers.	[SLO: CC-11-F-02]
93	The teacher will describe different models of storing data on the cloud.	[SLO: CC-11-G-01]
94	The students will perform practical work by uploading files to cloud storage platforms such as Google Cloud Storage.	[SLO: CC-11-G-01]
95	The teacher will explain how cloud storage integrates with computing resources for efficient data processing.	[SLO: CC-11-G-02]
96	The students will perform practical work by connecting cloud storage to compute on GCP.	[SLO: CC-11-G-02]
97	The teacher will discuss the importance of scalability in cloud applications.	[SLO: CC-11-H-01]
98	The teacher will differentiate between vertical and horizontal scaling in cloud applications.	[SLO: CC-11-H-02]
99	The students will perform practical work by scaling a cloud application both vertically and horizontally.	[SLO: CC-11-H-02]
100	The teacher will explain the advantages of transitioning to a full-fledged cloud platform for scalability.	[SLO: CC-11-H-03]
101	The students will perform practical work by designing a scalable architecture using GCP services.	[SLO: CC-11-H-05]
102	The teacher will explain key services of modern cloud platforms for scalability, including compute and load balancing.	[SLO: CC-11-H-04]
103	The students will perform practical work by designing and deploying scalable cloud architecture for a web application.	[SLO: CC-11-H-04]
104	The teacher will explain the concept of auto-scaling in cloud applications and its benefits.	[SLO: CC-11-H-01]
105	The students will perform practical work by enabling auto-scaling for a cloud-based application.	[SLO: CC-11-H-01]
106	The teacher will discuss cloud-native services like containers and orchestration tools.	[SLO: CC-11-H-04]
107	The students will perform practical work by deploying a containerized application on GCP using Kubernetes.	[SLO: CC-11-H-04]
108	The teacher will explain cloud monitoring tools and their role in ensuring application performance.	[SLO: CC-11-H-01]
109	The students will perform practical work by integrating monitoring tools into a cloud-based application.	[SLO: CC-11-H-01]
110	The teacher will explain the concept of microservices and how they benefit cloud applications.	[SLO: CC-11-H-02]
111	The students will perform practical work by designing a microservices-based architecture on GCP.	[SLO: CC-11-H-02]
112	The teacher will discuss the role of cloud security in application scalability and performance.	[SLO: CC-11-H-03]
113	The students will perform practical work by implementing cloud security best practices in a web application.	[SLO: CC-11-H-03]
114	The teacher will explain the use of edge computing in cloud	[SLO: CC-11-H-01]

	applications for faster data processing.	
115	The students will perform practical work by setting up edge computing features in a cloud-based app.	[SLO: CC-11-H-01]
116	The teacher will explain the role of cloud APIs in integration and scalability.	[SLO: CC-11-H-02]
117	The students will perform practical work by integrating third-party APIs into a cloud-based application.	[SLO: CC-11-H-02]
118	The teacher will discuss the significance of data management in cloud applications.	[SLO: CC-11-H-04]
119	The students will perform practical work by implementing data management strategies in cloud apps.	[SLO: CC-11-H-04]
120	The teacher will describe different storage solutions available in the cloud for large-scale applications.	[SLO: CC-11-G-01]
121	The students will perform practical work by setting up and using cloud-based object storage for large-scale data.	[SLO: CC-11-G-01]
122	The teacher will explain cloud deployment strategies and how to choose the right one.	[SLO: CC-11-H-05]
123	The students will perform practical work by selecting a cloud deployment strategy for a sample project.	[SLO: CC-11-H-05]
124	The teacher will explain the final steps for scaling an application and monitoring its performance.	[SLO: CC-11-H-01]
125	The students will perform practical work by scaling their cloud-based application to meet increasing traffic demands.	[SLO: CC-11-H-01]
126	**Revision & Preparation**	
	FINAL EXAMS	