



# GUJARAT TECHNOLOGICAL UNIVERSITY

Program Name: Industry Led Minor/Hons.

Level: UG

Branch: Microsoft Cloud & AI Honors

Subject Code: BE05IAS011

Subject Name: Microsoft Azure Cloud Development & Security

w. e. f. Academic Year:	2026-2027
Semester:	5 <sup>th</sup>
Category of the Course:	Core Course

<b>Prerequisite:</b>	Proficiency in at least one programming language (C#, Java, Python, JavaScript, etc.), General IT security knowledge (firewalls, encryption, access control).
<b>Rationale:</b>	AZ-204 trains participants to develop and deploy cloud applications using Azure services and DevOps practices, while AZ-500 equips them to secure workloads with identity, network, and data protection. Together, these courses prepare learners to effectively administer, develop, and secure solutions on Microsoft Azure.

### Course Outcome:

After Completion of the Course, Student will able to:

No	Course Outcomes	RBT Level
01	Learners explore compute solutions, storage integration,	A
02	Students can opt Azure Functions, event-driven architectures, and security in application development	E
03	Participants learn to secure identities, networks, applications, and data in Azure	C

\*Revised Bloom's Taxonomy (RBT)

### Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits	Assessment Pattern and Marks				Total Marks
L	T	PR	C	Theory		Tutorial / Practical		
				ESE (E)	PA / CA (M)	PA/CA (I)	ESE (V)	
03	00	02	4	100	00	00	00	100



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## Course Content:

Unit No.	Content	No. of Hours	% of Weightage
1.	Compute and Application Development, where learners build and deploy scalable cloud-native applications using services like Azure App Service, Azure Functions, containers, and Kubernetes. This area emphasizes developing modern, event-driven, and serverless applications that can scale efficiently in the cloud.	20	26.66
2.	Data, Integration, and Messaging, enabling developers to create data-driven and distributed solutions. It includes working with Azure Storage, Cosmos DB, SQL databases, caching mechanisms, and messaging services such as Service Bus and Event Grid to ensure reliable communication between applications and seamless system integration.	20	26.66
3.	Security, Monitoring, and Optimization, ensuring that applications are secure, observable, and production-ready. This includes implementing authentication and authorization, managing identities and access control, securing secrets, and monitoring performance using Azure's logging and diagnostics tools to maintain reliability and operational excellence.	10	13.33
4.	Identity & Access Security focuses on securing identities, managing authentication, and enforcing access controls across Azure environments. It includes implementing Microsoft Entra ID (formerly Azure AD), configuring role-based access control (RBAC), managing privileged identities, enabling multi-factor authentication, conditional access policies, and protecting administrative accounts. The goal is to ensure secure and governed access to Azure resources.	10	13.33
5.	Platform & Infrastructure Protection covers securing Azure infrastructure components including virtual networks, virtual machines, storage, and databases. It includes implementing network security groups, private endpoints, firewalls, encryption, Azure Key Vault, container security, and workload protection. Learners gain the ability to design and implement security controls across compute, network, and data layers.	8	10.66



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<b>6.</b>	Security Operations & Threat Protection focuses on monitoring, detecting, and responding to threats within Azure environments. It includes configuring Microsoft Defender for Cloud, Microsoft Sentinel, security policies, compliance controls, logging, and incident response mechanisms. The emphasis is on proactive security posture management, threat detection, and operational resilience.	7	9.33
<b>Total</b>		<b>75</b>	<b>100</b>

**Suggested Specification Table with Marks:**

Distribution of Marks (in %)					
R Level	U Level	A Level	N Level	E Level	C Level
0%	5%	10%	25%	30%	30%

*Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)*

<b>Skill &amp; Practical Activities to be carried out during Semester</b>						
<b>Important Note:- Please keep only applicable categories relevant to your offerings in this table and delete not applicable categories“</b>						
Sr. No.	Category of Engagement	Describe the activities to be carried out by students in brief	Expected Frequency & Duration	Mode of Delivery (Online / Offline / Hybrid)	Tools / Platforms / Equipment / Machinery to be Used	Expected major Learning Outcomes in 2 or 3 bullet points
1	Master Classes / Expert Lectures by Industry Professionals	Students will get to hear from Industry Professional (Consultants) about	6 classes, 45 hours	Offline/Hybrid	Microsoft Sandbox environment, CloudThat's Exam ready	Learners explore compute solutions, storage integration  Students can opt Azure Functions,



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		exposure to the IT industry, they will carry out Hands on, discuss Industry Use cases etc.			platform, MS Learn etc.	event-driven architectures, and security in application development  Participants learn to secure identities, networks, applications, and data in Azure
2	Case Studies / Bootcamps / Workshops	Students will solve the case studies assigned to them during the session.	2-3 case studies, 10 hours	Offline/Hybrid	Microsoft Sandbox environment, CloudThat's Exam ready platform, MS Learn etc.	Learners explore compute solutions, storage integration  Students can opt Azure Functions, event-driven architectures, and security in application development  Participants learn to secure identities, networks, applications, and data in Azure
3	Quizzes / Competency-Based Evaluation	Students will attempt the Quizzes and Post course completion assessment.	2-3 assessments, 5 hours	Offline/Hybrid	Microsoft Sandbox environment, CloudThat's Exam ready platform, MS Learn etc.	Learners explore compute solutions, storage integration  Students can opt Azure Functions, event-driven architectures, and security in application development



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						Participants learn to secure identities, networks, applications, and data in Azure.
4	Hands-on Training / Lab Exercises / Tool-Based Learning	Students will perform Hands on assigned to them during the session.	4-5 Labs, 15 hours	Offline/Hybrid	Microsoft Sandbox environment, CloudThat's Exam ready platform, MS Learn etc.	<p>Learners explore compute solutions, storage integration</p> <p>Students can opt Azure Functions, event-driven architectures, and security in application development</p> <p>Participants learn to secure identities, networks, applications, and data in Azure</p>

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