



<b>Name of Faculty</b>	:	Faculty of Engineering & Technology
<b>Name of Program</b>	:	Master of Technology (M.Tech.) - Artificial Intelligence and Data Science
<b>Course Code</b>	:	1MAI04
<b>Course Title</b>	:	Introduction to Cloud Fundamental
<b>Type of Course</b>	:	Open Elective
<b>Year of Introduction</b>	:	2023-24

<b>Prerequisite</b>	:	Able to know the working of blockchain technology and the real-world applications of blockchain
<b>Course Objective</b>	:	This course is aimed at imparting candidates for defines Cloud Computing and establishes a strong working knowledge of the concepts and technologies needed to work effectively with the cloud.
<b>Course Outcomes</b>	:	At the end of this course, students will be able to:
	CO1	Edge computing is described in detail with different cloud platforms.
	CO2	Sensor data processing from gateway to cloud and its security of real time data is discussed.
	CO3	Summarize the application of latest technologies such as AI, Iot, cloud computing etc.
	CO4	To Understand and learn Edge Computing.
	CO5	To learn and implement FOG computing
	CO6	To understand and learn wearable computing

### Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	SEE	CIA	SEE	CIA	
3	0	2	4	70	30	30	20	150

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P - Practical, C - Credit, SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

### Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	<b>Cloud Computing Introduction:</b> Introduction to Cloud Computing, Cloud Computing Platforms, Parallel Programming in the Cloud, Distributed Storage Systems, Virtualization,	12	20%	CO1

	Cloud Security, Multicore Operating Systems, Industrial Applications, Cloud computing Tools: IBM Watson, Azure, AWS, Google, Things works, Tigerino.			
2	<b>EDGE COMPUTING:</b> The Evolution of Cloud Computing, Edge computing, Data from sensors and gateway to cloud, Security and privacy of data, Real time data, Advantages of cloud computing in IoT.	12	20%	CO1 CO2
3	<b>INTRODUCTION TO FOG COMPUTING</b> Sensing Technologies for Internet of Things, Local and GPS, IoT Interactions with GPS, Clouds, and Smart Machines, RFID, Sensors, Wireless Sensor Networks and GPS Systems, Cognitive Computing Technologies and Prototype Systems, Cloud-Based Radio Access Network (RAN) for Building Mobile Networks, IoT Interaction Frameworks with Clouds and Devices, Example: IoT-Based Healthcare Systems and Applications.	12	20%	CO2 CO3
4	<b>WEARABLE COMPUTING</b> Social Aspects of Wearability, Internet of Things – Applications, Wearable Chemical and Biochemical Sensors, Technology of Connected Devices – Device Types, Sensors, Actuators.	12	20%	CO2 CO6
5	<b>Internet of Things</b> Devices, Objects, Transducers, Controllers, Medical Applications of Wearable Technologies, Internet of Things – Connectivity, Flexible Electronics and Textiles for Wearable Technologies	12	20%	CO4 CO3 C O6

**Suggested Distribution of Theory Marks Using Bloom's Taxonomy**

Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
<b>Weightage</b>	20	30	30	20	0	0

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

**Suggested Learning Websites**

Sr. No.	Name of Website
1	<a href="https://tutorialsdojo.com/fundamentals-of-cloud-computing/">https://tutorialsdojo.com/fundamentals-of-cloud-computing/</a>
2	<a href="https://k21academy.com/cloud-blogs/cloud-fundamentals/">https://k21academy.com/cloud-blogs/cloud-fundamentals/</a>
3	<a href="https://sagaratechnology.medium.com/the-fundamentals-of-cloud-computing-ae69ca7ff576">https://sagaratechnology.medium.com/the-fundamentals-of-cloud-computing-ae69ca7ff576</a>



### Reference Books

Sr. No.	Name of Reference Books
1	Cloud Computing For Dummies by Judith Hurwitz, Robin Bloor, Marcia Kaufman, and Fern Halper was published in 2009.
2	A Hands-On Approach by Arshdeep Bahga and Vijay Madisetti was published by the latter in 2014.
3	Cloud Computing: Methodology, Systems, and Applications by Lizhe Wang, Rajiv Ranjan, Jinjun Chen, and Boualem Benatallah were released by CRC Press in 2017.
4	Cloud Computing: Concepts, Technology & Architecture written by Zaigham Mahmood, Ricardo Puttini, and Thomas Erl was published by Pearson in 2013.