National Institute of Technology Meghalaya
An Institute of National Importance

CURRICULUM

Programme	Master of Computer Applications		Academic Year of Regulation		**2024-25**
Department	Computer Science and Engineering		Semester		**IV**

Course Code	Course Name		Pre-Requisite	Credit Structure				Marks Distribution			
				L	T	P	C	INT	MID	END	Total
CA506	**Cloud Computing**			**3**	**0**	**0**	**3**	**50**	**50**	**100**	**200**

Course Objectives		Course Outcomes	CO's	Statement	Bloom's Taxonomy
Course Objectives	This course introduces the concept of cloud computing and background technologies.	Course Outcomes	CA506.1	Able to acquire knowledge about cloud computing, its vision, and history, characteristics.	Understand
	This course summarizes the background cryptographic mathematics which will be applied in Cloud computing		CA506.2	Able to acquire knowledge about the background technologies and cryptographic mathematics of Cloud Computing.	Understand
	This course explain about architecture, types and the security flaws in Cloud computing.		CA506.3	Able to acquire knowledge about the Cloud architecture, Cloud types and its various services.	Understand
	This course describes the concept of various cloud computing platform available.		CA506.4	Able to analyse the security of cloud computing.	Analyse
			CA506.5	Able to analyse the various cloud platform available.	Analyse

COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CA506.1	3	2											2		3
CA506.2	3	2				1			2				2	3	2
CA506.3	3	3	3	1		1	2		2				3	3	2
CA506.4	2	3	3	1	2	2	3		2			1	3	2	2
CA506.5	2	3	3		2	2	3		2			1	3	3	3
CA506	2.60	2.60	3.00	1.00	2.00	1.50	2.67		2.00			1.00	2.60	2.75	2.40

SYLLABUS

No.	Content	Hours	COs
I	Introduction to Clouds, Cloud Computing architecture, Virtualization and Virtual Machine, service management in cloud computing	10	CA506.1, CA506.2, CA506.3
II	Data Management in Cloud computing, resource management in cloud, Cloud security	10	CA506.1, CA506.2
III	Open source and commercial clouds, cloud simulators, research trend in cloud computing, fog computing, VM resource allocation, management and monitoring, Cloud-Fog-Edge enabled analytics	12	CA506.3, CA506.4
IV	Serverless computing and FaaS Model, Case Studies and recent Advancements	10	CA506.5
	Total Hours	42	

Essential Readings

1. Rajkumar Buyya, James Broberg, Andrzej M. Goscinski, "Cloud Computing: Principles and Paradigms", 1st Edition, Wiley, 2013

2. Gautam Shroff, "Enterprise Cloud Computing - Technology, Architecture, Applications", 1st Edition, Cambridge University Press, 2010

3. Barrie Sosinsky, "Cloud Computing Bible", 1st Edition, Wiley-India, 2011

4. Ronald L. Krutz, Russell Dean Vines, "Cloud Security: A Comprehensive Guide to Secure Cloud Computing", 1st Edition, Wiley- India,2010

Supplementary Readings

1. Nancy Lynch, "Distributed Algorithms", Morgan Kaufmann Publishers In, 1996

2. Kai Hwang, Jack Dongarra, Geoffrey Fox, "Distributed and Cloud Computing From Parallel Processing to the Internet of Things", 1st Edition, Morgan Kaufmann, 2013

3. Nikos Antonopoulos, Lee Gillam, "Cloud Computing: Principles, Systems and Applications", Springer, 2012