	National Institute of Technology Meghalaya An Institute of National Importance	CURRICULUM

Programme	**Bachelor of Technology in Computer Science and Engineering**	Academic Year of Regulation	**2018-2019**
Department	**Computer Science and Engineering**	Semester	**VIII**

Course Code	Course Name	Credit Structure				Marks Distribution			
		L	T	P	C	INT	MID	END	Total
CS 412	**Mobile Computing**	**3**	**0**	**0**	**3**	**50**	**50**	**100**	**200**

Course Objectives	**This course explains the basics, Issues and challenges in Wireless communication networks area and its applications communication Systems**	Course Outcomes	CO1	**Able to explain the issues challenges and need of wireless communication system and comparison with mobile environment.**
	This course provides the broad and in-depth knowledge, and a critical understanding of mobile computing with different viewpoints such as infrastructures, principles and theories, technologies.		CO2	**Able to demonstrate and analyse mobile computing concepts, basic and advanced infrastructure, technologies, and applications with different viewpoints.**
	This course provides the knowledge of various terminology, principles, devices, schemes, concepts, algorithms, protocols, and different data management methodologies used in wireless mobile communication networks		CO3	**Able to describe and analyse the devices, methodologies, algorithms, Protocols in Mobile communication networks**
	This course provides the mechanism to develop mobile data access, Transaction and e-commerce principles over mobile devices and social and ethical issues of mobile computing, including privacy.		CO4	**Able to design and develop the data management and security algorithm in Mobile communication networks.**
			CO5	**Able to analyse and evaluate the various data access methodologies and security scheme for e-commerce for mobile devices, and social, ethical and privacy issues.**

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	3	3	-	-	-	-	-	-	2	-	-	-	3	-	3
2	CO2	3	2	3	1	2	-	-	-	1	-	-	-	2	3	2
3	CO3	1	2	3	2	3	2	-	-	-	-	-	-	2	2	3
4	CO4	2	3	3	3	3	2	2	-	2	-	-	1	3	3	2
5	CO5	3	3	3	2	2	3	2	-	2	-	-	1	3	2	3

SYLLABUS

No.	Content	Hours	COs
I	**Introduction: Introduction, issues in mobile computing, Overview of wireless telephony: Cellular concept, GSM, channel structure, location management: HLR-VLR, Hierarchal, Hands off, Channel allocation in cellular systems, CDMA, GPRS.**	**05**	**CO1**
II	**Wireless Networking, wireless LAN overview: Mac issues, IEEE 802.11, Wireless multiple access protocols**	**05**	**CO1** **CO2**
III	**Wireless Communication: TCP over wireless applications. Data broadcasting, Mobile IP.**	**06**	**CO2**
IV	**Wireless Application Protocol : Architecture, Protocol stack, Application environment, Applications.**	**06**	**CO3**
V	**Data Management: Data management issues, Data replication for mobile computers, Adaptive clustering for mobile wireless networks, File system, Disconnected operations, Security.**	**07**	**CO3** **CO4**
VI	**Mobile data Access system: Mobility issues, Mobile Agent, On demand services, Broadcast service, Transaction processing, Security and Fault tolerance.**	**07**	**CO4** **CO5**
	Total	**36**	

Essential Readings

1. William Stallings, Wireless Communications & Networks, 2/E, Pearson Education India, 2007.
2. Raj Kamal , Mobile Computing, Oxford Higher Education/Oxford University Press, 2/E, 2014
3. J.Schiller, Mobile Communication" Pearson Education India, 2/E, 2009.
4. Sandeep Singhal,The Wireless Application Protocol , Pearson India, 1/E, 2001

Supplementary Readings

1. Sandeep Singhal, The Wireless Application Protocol, Pearson India, 1/E, 2001
2. Charles E Perkins, Mobile IP: Design Principles and Practices, Pearson Education, 1/E, 1998
3. T S Rappaport, "Wireless Communications: Principles & Practice, 2/E, Pearson Education, 2002