J.B. INSTITUTE OF ENGINEERING & TECHNOLOGY

(AUTONOMOUS)

ACADEMIC YEAR

2015-2016

http://www.jbiet.edu.in

	COURSE PLAN	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

COURSE DETAILS

Name Of The Programme::	B. Tech	Batch::	2012
Designation::	Assistant Professor		
Year IV		Semester I	
Department::	Information Technology		
Title of The Subject	Wireless Networks and Mobile Computing	Subject Code:	6757081
No of Students	46		

	COURSE PLAN	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

1. TARGET

a) Percentage Pass: 100

b) Percentage I class: 90

2. COURSE PLAN

(Please write how you intend to cover the contents: i.e., coverage of Units by lectures, guest lectures, design exercises, solving numerical problems, demonstration of models, model preparation, or by assignments, etc.)

3. METHOD OF EVALUATION

3.1. ☐ Continuous Assessment Examinations (CAE 1, CAE 2)

3.2. ☐ Assignments / Seminars

3.3. ☐ Mini Projects

3.4. ☐ Quiz

3.5. ☐ Term End Examination

3.6. ☐ Others

4. List out any new topic(s) or any innovation you would like to introduce in teaching the subject in this Semester.

Signature of HOD
Date:

Signature of Faculty
Date:

	GUIDELINES TO STUDY THE SUBJECT	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy

Designation: Assistant Professor

Department:: Information Technology

Guidelines for Preparing the Course:

Course Description:
This course will provide in-depth knowledge, and a critical understanding of mobile computing from different viewpoints: infrastructures, principles and theories, technologies, and applications in different domains. The course will provide a complete overview of the mobile computing subject area, including the latest research.

Course Objective:
This course will provide graduate students of B.Tech Information Technology with both broad and in-depth knowledge, and a critical understanding of mobile computing from different viewpoints: infrastructures, principles and theories, technologies, and applications in different domains. The course will provide a complete overview of the mobile computing subject area, including the latest research. In Unit 6, each student will have the opportunity to delve into more specific technology and/or application domains by forming a small special interest group (SIG) with their fellow students. In addition, through presentations, Q&A, and debates, students will have the opportunity to further explore specific topics.

Learning Outcomes:
Student is able to explain general principles, paradigms and basic concepts of understanding of mobile computing from different viewpoints: infrastructures, principles and theories, technologies, and applications in different domains. The course will provide a complete overview of the mobile computing subject area, including the latest research.

	COURSE OBJECTIVES	2015-16
		Regulation: R12

FACULTY DETAILS:

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On completion of this Subject / Course the student shall be able to:

S.No.	Objectives	Outcomes
1.	Learn the basics of networking theory.	Articulate and critically assess the complexities involved in designing and building systems and applications in a mobile and ubiquitous computing context
2.	Learn networking concepts relevant to modern wireless systems	Employ advanced principles of computer science and engineering in the identification, formulation, analysis and solution of real
3.	Learn emerging mobile computing ideas and best practices	Assess available techniques for interaction design and usability improvement, and apply these techniques within the software development process, taking account of the factors which influence human performance, and the major concepts relevant to human error, and critique the interface of interactive systems with reference to a task model and its associated scenarios
4.	Learn new cloud computing ideas, and how it they relate to mobile computing.	Undertake complex embedded and concurrent programming tasks demonstrating a critical understanding of the acquisition of sensor data, and the manipulation of sensor data through numeric, algorithmic and signal processing techniques
5.		Evaluate different approaches to modelling information and knowledge

	Learn fundamental concepts that underlies in most programming languages.	
6.	Get hands-on knowledge practice with mobile computing and cloud services	Apply current software development methodologies, working effectively as an individual or within a team, in the production of a substantial piece of ubiquitous computing software in consultation with a client
7.	Define Mobile Computing and look at current trends	Synthesise emergent concepts and technology innovations in defining a mobile, autonomous and ubiquitous computing innovation agenda; design, manage and realise a novel technical service and/or product; assess commercialisation strategies within the domain.

Signature of Faculty
Date:

Note: For each of the OBJECTIVE indicate the appropriate OUTCOMES to be achieved.
Kindly refer Page 16, to know the illustrative verbs that can be used to state the objectives.

	COURSE OUTCOMES	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

The expected outcomes of the Course / Subject are:

S.No.	General Categories of Outcomes	Specific Outcomes of the Course
A.	An ability to apply knowledge of mathematics, science, and engineering	
B.	An ability to design and conduct experiments, as well as to analyze and interpret data	
C.	An ability to design a system, component, or process to meet desired needs within realistic Constraints such as economic, environmental, social, political, ethical, health and safety, Manufacturability and sustainability	
D.	An ability to function on multi-disciplinary teams	
E.	An ability to identify, formulate, and solve engineering problems	
F.	An understanding of professional and ethical responsibility	
G.	An ability to communicate effectively	
H.	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	
I.	A recognition of the need for, and an ability to engage in life-long learning	
J.	A knowledge of contemporary issues	
K.	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	

Objectives – Outcome Relationship Matrix (Indicate the relationships by ☒ mark).

Outcomes / Objectives	A	B	C	D	E	F	G	H	I	J	K
1.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
2.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
3.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
4.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
5.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
6.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

	COURSE SCHEDULE	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

The Schedule for the whole Course / Subject is::

S. No.	Description	Duration (Date)		Total No. of Periods
		From	To	
1.	Introduction to Network Technologies and cellular Communications : HIPERLAN: Protocol Architecture, Physical Layer, Channel Access Control Sub-Layer, MAC Sub-Layer, Information Bases and Networking. WLAN: Infrared Vs Radio Transmission, Infrastructure and Ad Hoc Networks, IEEE 802.11, Bluetooth: User Scenarios, Physical Layer, MAC layer, Networking, Security, Link Management. GSM: Mobile services, System architecture, Radio interface, Protocols, Localization and calling, Handover, Security, and New data services. Mobile Computing (MC): Introduction to MC, novel applications, limitations, and architecture.	29-06-2015	09-07-2015	10
2.	(Wireless) Medium Access Control (MAC): Motivation for a specialized MAC (Hidden and exposed terminals, Near and far terminals), SDMA, FDMA, TDMA, CDMA. MAC protocols for GSM, Wireless LAN (IEEE802.11). Collision Avoidance (MACA, MACAW) Protocols.	13-07-2015	23-07-2015	10
3.	Mobile IP Network Layer : IP and Mobile IP Network Layers, packet delivery and Handover Management, Location Management, Registration, tunneling and encapsulation, Route optimization, DHCP.	25-07-2015	13-08-2015	11
4.	Mobile Transport Layer : Conventional TCP/IP Protocols, Indirect TCP, Snooping TCP, Mobile TCP, Other transport Layer Protocols for Mobile Networks.	17-08-2015	22-08-2015	12
5.	Database Issues: Database Hoarding & caching Techniques, client-server computing with adaptation, Transactional models, query processing, Data recovery Process, and QOS quality of service issues.	31-08-2015	08-09-2015	10

6.	Data Dissemination and Synchronization: Communications asymmetry, classification of Data delivery mechanisms, Data Dissemination Broadcast models, Selective Tuning and Indexing methods. Digital Audio	09-09-2015	21-09-2015	07
7	Mobile Ad hoc Networks (MANETs): Overview, Properties of a MANET, spectrum of MANET applications, routing and various routing algorithms, security in MANETs.	22-09-2015	30-09-2015	08
8	Protocols and Tools: Wireless Application Protocol-WAP. (Introduction, protocol architecture, and treatment of protocols of all layers), Bluetooth (User scenarios, physical layer, MAC layer, networking, security, link management) and J2ME.	01-10-2015	22-10-2015	08

Total No. of Instructional periods available for the course:85 Hours / Periods

	SCHEDULE OF INSTRUCTIONS UNIT - I	2015-16 Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology
The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	29/06/2015	1	Introduction to Network Technologies and cellular Communications :	1	Jochen chiller,"Mobile Communications",Addison-Wesley.(Chapters **4,**7,9,10,11),second edition, 2004 (TB 1)
2	30/06/2015	1	HIPERLAN: Protocol Architecture, Physical Layer		(TB1)
3	01/07/2015	1	Channel Access Control Sub-Layer		(TB1)
4	02/07/2015	1	MAC Sub-Layer, Information Bases and Networking.		(TB1)
5	04/07/2015	1	WLAN: Infrared Vs Radio Transmission		(TB1)
6	06/07/2015	1	Infrastructure and Ad Hoc Networks		(TB1)
7	07/07/2015	1	IEEE 802.11, Bluetooth: User Scenarios		(TB1)
8	08/07/2015	2	Physical Layer, MAC layer, Networking		(TB1)
9	09/07/2015	1	Security, Link Management.		(TB1)
10	08/07/2015	1	GSM: Mobile services, System architecture		(TB1)
11	09/07/2015	1	Radio interface, Protocols		(TB1)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
3. MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS	2015-16
	UNIT - II	Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi reddy
Designation: Assistant Professor
Department:: Information Technology

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	13/7/2015	1	Localization and calling, Handover	2	(TB1)
2	14/7/2015	1	Security and New data services.		(TB1)
3	15/7/2015	1	Mobile Computing (MC): Introduction to MC		(TB1)
4	16,17/7/2015	2	Novel applications, limitations, and architecture.		(TB1)
5	20/7/2015	1	Medium Access Control		(TB1)
6	21,22/7/2015	2	Motivation for a specialized MAC (Hidden and exposed terminals, Near and far terminals		(TB1)
7	23/7/2015	5	SDMA, FDMA, TDMA, CDMA. MAC protocols for GSM, Wireless LAN (IEEE802.11). Collision Avoidance (MACA, MACAW) Protocols.		(TB1)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS UNIT - III	2015-16 Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	25/07/2015	1	Mobile IP Network Layer	3	(TB1)
2	27,30/07/2015	2	IP and Mobile IP Network Layers		(TB1)
3	3/08/2015	1	Packet delivery		(TB1)
4	4/08/2015	1	Handover Management		(TB1)
5	6/08/2015	1	Location Management		(TB1)
6	8/08/2015	1	Registration		(TB1)
7	11,12,13/08/2015	3	Tunneling and encapsulation, Route optimization, DHCP.		(TB1)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS **UNIT - IV**	2015-16 Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	17/08/2015	2	Mobile Transport Layer	4	(TB1)
2	18/08/2015	2	Conventional TCP/IP Protocols		(TB1)
3	19/08/2015	1	Indirect TCP		(TB1)
4	20/08/2015	1	Snooping TCP		(TB1)
5	21/08/2015	2	Mobile TCP		(TB1)
6	22/08/2015	4	Other transport Layer Protocols for Mobile Networks		(TB1)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS **UNIT - V**	2015-16 Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	31/08/2015	1	Database Issues	1,2	(TB1)
2	01/09/2015	2	Database Hoarding & caching Techniques		(TB1)
3	02/09/2015	2	client-server computing with adaptation		(TB1)
4	03/09/2015	2	Transactional models		(TB1)
5	05/09/2015	1	Query processing,		(TB1)
6	07/09/2015	1	Data recovery Process		(TB1)
7	08/09/2015	2	QOS quality of service issues.		(TB1)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS **UNIT - VI**	2015-16 Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	09/09/2015	1	Data Dissemination	3	(TB1)
2	10/09/2015	1	Synchronization		(TB1)
3	12/09/2015	1	Communications asymmetry		(TB1)
4	14/09/2015	2	Classification of Data delivery mechanisms		(TB1)
5	15/09/2015	2	Data Dissemination Broadcast models		(TB1)
6	16/09/2015	1	Selective Tuning		(TB1)
7	19/09/2015	1	Indexing methods		(TB1)
8	21/09/2015	1	Digital Audio Broadcasting		(TB1)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS **UNIT - VII**	2015-16 Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology
The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	22/09/2015	1	Mobile Ad hoc Networks (MANETs)	4	Stojmenovic and Cacute, "Handbook of Wireless Networks and Mobile Computing", Wiley, 2002, ISBN 471419028. (Chapters 11, 15, 17, 26 and 27)
2	23,26/09/2015	2	Overview, Properties of a MANET,		(TB2)
3	26/09/2015	1	Spectrum of MANET applications,		(TB2)
4	28,29/09/2015	2	Routing and various routing algorithms		(TB2)
5	30/09/2015	3	Security in MANETs.		(TB2)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	SCHEDULE OF INSTRUCTIONS **UNIT - VIII**	2015-16 Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

The Schedule for the whole Course / Subject is::

Sl. No.	Date	No. of Periods	Topics / Sub - Topics	Objectives & Outcome Nos.	References (Text Book, Journal…) Page No___ to ___
1	1,3/10/2015	2	Protocols and Tools	5,6	(TB2)
2	5,6,7,8/10/2015	4	Wireless Application Protocol-WAP. (Introduction, protocol architecture, and treatment of protocols of all layers)		(TB2)
3	12,13/10/2015	2	Bluetooth : User scenarios, physical layer		(TB2)
4	15,17,19/10/2015	3	Bluetooth: MAC layer, networking, security, link management		(TB2)
5	20,21,22/10/2015	1	J2ME.		(TB2)

Signature of Faculty
Date

Note: 1. ENSURE THAT ALL TOPICS SPECIFIED IN THE COURSE ARE MENTIONED.
2. ADDITIONAL TOPICS COVERED, IF ANY, MAY ALSO BE SPECIFIED **BOLDLY**.
MENTION THE CORRESPONDING COURSE OBJECTIVE AND OUT COME NUMBERS AGAINST EACH TOPIC.

	COURSE COMPLETION STATUS	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy

Subject:: Wireless Networks and Mobile Computing

Subject Code: 6757081

Department:: Information Technology

Actual Date of Completion & Remarks, if any

Units	Remarks	Nos. of Objectives Achieved
Unit 1	Introduction to Network Technologies	2
Unit 2	Medium Access Control	3
Unit 3	Mobile Network Layer	2
Unit 4	Mobile Transport Layer	2
Unit 5	Database Issues Cellular Communications	3
Unit 6	Data Dissemination	4
Unit 7	Mobile Ad-Hoc Networks	2
Unit 8	Protocols and Tools	3

Signature of Dean of School
Date:

Signature of Faculty
Date:

NOTE: AFTER THE COMPLETION OF EACH UNIT MENTION THE NUMBER OF OBJECTIVES ACHIEVED.

	TUTORIAL SHEETS - I	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology
The Schedule for the whole Course / Subject is::

Date:

This Tutorial corresponds to Unit Nos. Time:

Q1.

Q2.

Q3.

Q4.

Q5.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School
Date:

Signature of Faculty
Date:

	TUTORIAL SHEETS - II	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology
The Schedule for the whole Course / Subject is::

Date:

This Tutorial corresponds to Unit Nos. Time:

Q1. . Explain data synchronization and its importance with examples.

2. How is mobility managed in a mobile system?

3. What are the sensors used in the pervasive computing Smartphone devices?

4. (a) Explain SDM and SDMA in detail

(b) Explain TDMA and its features

5. Describe forward and reverse link structure and frames in IS-95.

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School
Date:

Signature of Faculty
Date:

	TUTORIAL SHEETS - II	2015-16
		Regulation: R12

FACULTY DETAILS:

Name of the Faculty:: B.Deepthi Reddy
Designation: Assistant Professor
Department:: Information Technology

Date:

This Tutorial corresponds to Unit Nos. Time:

Q1. . What were the requirements associated with the mobile IP standard? How they are met by mobile IP?

2. The goal of mobile IP is supporting end system mobility while maintaining scalability, efficiency, and compatibility in all respects with existing applications and internet protocols. Explain.

3. With the help of an example diagram, explain how IP packets are transferred from fixed node to mobile node.

4. Describe the states of a TCP connection. How does the change of state from LISTEN to CLOSE take place at the transmitter and receiver ends?

5. When are the fast transmission and fast recovery triggered? What are the TCP Reno and new TCP Reno modifications in the fast transmission and fast recovery method?

6. Describe the slow chart of congestion control. How many fast recovery take place in the congestion avoidance phase?

Please write the Questions / Problems / Exercises which you would like to give to the students and also mention the objectives to which these questions / Problems are related.

Signature of Dean of School
Date:

Signature of Faculty
Date:

	ILLUSTRATIVE VERBS FOR STATING INSTRUCTIONAL OBJECTIVES	2015-16 Regulation: R12

These verbs can also be used while framing questions for Continuous Assessment Examinations as well as for End – Semester (final) Examinations.

ILLUSTRATIVE VERBS FOR STATING **GENERAL OBJECTIVES**

Know Comprehend	Understand Apply	Analyze Design	Generate Evaluate

ILLUSTRATIVE VERBS FOR STATING **SPECIFIC OBJECTIVES:**

A. Cognitive Domain

1	2	3	4	5	6
Knowledge	**Comprehension Understanding**	**Application** of knowledge & comprehension	**Analysis** of whole w.r.t. its constituents	**Synthesis** combination of ideas/constituents	**Evaluation** judgement
Define	Convert	Change	Breakdown	Categorize	Appraise
Identify	Defend	Compute	Differentiate	Combine	Compare
Label	Describe (a	Demonstrate	Discriminate	Compile	Conclude
List	procedure)	Deduce	Distinguish	Compose	Contrast
Match	Distinguish	Manipulate	Separate	Create	Criticize
Reproduce	Estimate	Modify	Subdivide	Devise	Justify
Select	Explain why/how	Predict		Design	Interpret
State	Extend	Prepare		Generate	Support
	Generalize	Relate		Organize	
	Give examples	Show		Plan	
	Illustrate	Solve		Rearrange	
	Infer			Reconstruct	
	Summarize			Reorganize	
				Revise	

B. Affective Domain		**C. Psychomotor Domain (skill development)**				
Adhere	Resolve	Bend	Dissect	Insert	Perform	Straighten
Assist	Select	Calibrate	Draw	Keep	Prepare	Strengthen
Attend	Serve	Compress	Extend	Elongate	Remove	Time
Change	Share	Conduct	Feed	Limit	Replace	Transfer
Develop		Connect	File	Manipulate	Report	Type
Help		Convert	Grow	Move preciselyReset		Weigh
Influence		Decrease	Handle	Operate	Run	
Initiate		Demonstrate	Increase	Paint	Set	

	LESSON PLAN **Unit-1**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Introduction to Network Technologies and cellular Communications	50 Min	TB1	
2	HIPERLAN : Protocol Architecture, Physical Layer, Channel Access Control Sub-Layer,	50 Min	TB1, TB2	
3	MAC Sub-Layer, Information Bases and Networking.	50 Min	TB1	
4	WLAN : Infrared Vs Radio Transmission, Infrastructure and Ad Hoc Networks, IEEE 802.11,	50 Min	TB1, RB1	
5	Bluetooth : User Scenarios, Physical Layer, MAC layer, Networking, Security, Link Management.	50 Min	TB1, RB1	
6	GSM : Mobile services, System architecture, Radio interface, Protocols,	50 Min	TB1	
7	Localization and calling Handover, Security New data services	50 Min	TB1	
8	Mobile Computing (MC) : Introduction to MC, novel applications, limitations, and architecture.	50 Min	TB1	

On completion of this lesson the student shall be able to(Outcomes)

1.

2.

3.

4

	ASSIGNMENT **Unit-I**	2015-16 Regulation: R12

Assignment / Questions:

1. Explain data synchronization and its importance with examples.

2. How is mobility managed in a mobile system?

3. What are the sensors used in the pervasive computing Smartphone devices?

4. What are the various constraints of working with mobile devices?

5. Describe the process of call handover when mobile station moves.

6. Describe the authentication and access grant processes in GSM.

7. How are frequency channels and time-slots accessed by a mobile station?

8. Compare the following four medium access systems.
   (i) SDMA (ii) TDMA (iii) FDMA (iv) CDMA

9. Explain the entities of mobile IP.

10. (a) Explain the applications and limitations of mobile computing.

    (b) Explain GSM system architecture

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN **Unit-II**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	(Wireless) Medium Access Control (MAC): Motivation for a specialized MAC (Hidden and exposed terminals, Near and far terminals	50min	TB1	
2	Wireless LAN (IEEE802.11).	50min	TB1, TB2	
3	SDMA, FDMA, TDMA, CDMA	50min	TB1	
4	MAC protocols for GSM,	50min	TB1, RB1	
5	Collision Avoidance (MACA, MACAW) Protocols.	50min	TB1, RB1	

On completion of this lesson the student shall be able to

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	ASSIGNMENT **Unit-II**	2015-16 Regulation: R12

Assignment / Questions:

1. Assume that there are N stations. Stations transmit without sensing the channel. Under what

Conditions the performance f this scheme is good. When the performance is poor?. How carrier sensing helps to improve the situation. When carried sensing helps little. What is the suggested solution then?

2. Explain how priority based multiple access schemes can be implemented.

3. Compare the following three medium access systems.

(i) SDMA (ii) TDMA (iii) FDMA

4. (a) Explain SDM and SDMA in detail

(b) Explain TDMA and its features

5. Describe forward and reverse link structure and frames in IS-95.

6. Describe WCDMA. How and why is the variable spread factor used in WCDMA?

7. List the basic features of CDMA systems. Explain soft handover.

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Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN **Unit-III**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Mobile IP, Goals	50min	TB1	
2	assumptions, entities and terminology, IP packet delivery,	50min	TB1, TB2	
3	agent advertisement and discovery, registration, tunneling and encapsulation, optimizations	50min	TB1	
4	Dynamic Host Configuration Protocol (DHCP).	50min	TB1, RB1	
5	Dynamic Host Configuration Protocol (DHCP).	50min	TB1, RB1	
6	Mobile IP, Goals	50min	TB1	
7	assumptions, entities and terminology, IP packet delivery,	50min	TB1, TB2	

On completion of this lesson the student shall be able to(Outcomes)

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	ASSIGNMENT **Unit-III**	2015-16 Regulation: R12

Assignment / Questions:

1. What were the requirements associated with the mobile IP standard? How they are met by mobile IP?

2. The goal of mobile IP is supporting end system mobility while maintaining scalability, efficiency, and compatibility in all respects with existing applications and internet protocols. Explain.

3. With the help of an example diagram, explain how IP packets are transferred from fixed node to mobile node.

4. (a) Explain reverse tunnelling in mobile IP

   (b) What are the two possibilities of location of COA.

5. Describe multicasting in mobile IP protocol.

6. What is the difference between a datagram and a packet? What are the uses of datagram in the mobile IP protocol?

7. What is the difference between point-to-point, multicast and broadcast communication on a network? What is multicast tree?

8. How does a routing table help in routing packets? Why do we use subnets for routing on the Internet?

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Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN **Unit-IV**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Traditional TCP, Indirect TCP, Snooping TCP	50 Min	TB1	
2	Mobile TCP, Fast retransmit/fast recovery	50 Min	TB1, TB2	
3	Transmission /time-out freezing	50 Min	TB1,RB1	
4	Selective retransmission, Transaction oriented TCP.	50 Min	TB1, RB2	
5	Selective retransmission, Transaction oriented TCP.	50 Min	TB2, RB1	

On completion of this lesson the student shall be able to (Outcomes)

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	ASSIGNMENT **Unit-IV**	2015-16 Regulation: R12

Assignment / Questions:

1. Describe explicit notification schemes...

2. What are the functions of snooping sub-layer in the snooping TCP protocol?

How do the TCP packets transfer from a mobile node to the receiver end?

3. Give the advantages and disadvantages of mobile TCP.

4. Describe the states of a TCP connection. How does the change of state from LISTEN to CLOSE take place at the transmitter and receiver ends?

5. When are the fast transmission and fast recovery triggered? What are the TCP Reno and new TCP Reno modifications in the fast transmission and fast recovery method?

6. Describe the slow chart of congestion control. How many fast recovery take place in the congestion avoidance phase?

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Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN **Unit-V**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Hoarding techniques	50 Min	TB1	
2	caching invalidation mechanisms	50 Min	TB1, TB2	
3	client server computing with adaptation	50 Min	TB1,RB2	
4	power-aware and context-aware computing	50 Min	TB1, RB1	
5	transactional models	50 Min	TB1, RB1	
6	query processing	50 Min	TB2	
7	Recovery and quality of service issues.	50 Min	TB2,RB1	

On completion of this lesson the student shall be able to (Outcomes)

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	ASSIGNMENT **Unit-V**	2015-16 Regulation: R12

Assignment / Questions:

1. Why does a mobile device take quality of service issues into account while computing?

2. Show a client-server computing architecture in which the database is at application tier. How does this architecture differ if the application server fetches the data from the enterprise server tier?

3. Explain power-aware computing. What do you mean by context? Explain with examples. Describe context-aware computing.

4.Expalin query processing architecture for processing a query using distributed databases.

5. Explain cache invalidation mechanisms. Explain the advantages and disadvantages of stateless and stateful cache invalidation.

6.Explain the situation in which a database can crash. How does a database recover using recovery manager?

7. What is the role of logged entries in updating transactions?

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Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN **Unit-VI**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Data Dissemination and Synchronization:	50 Min	TB1, TB2	
2	Communications asymmetry,	50 Min	TB1,RB2	
3	classification of Data delivery mechanisms,	50 Min	TB1, RB1	
4	Data Dissemination	50 Min	TB1, RB1	
5	Broadcast models	50 Min	TB2	
6	Selective Tuning and Indexing methods	50 Min	TB2,RB1	
7	Digital Audio	50 Min	TB1	

On completion of this lesson the student shall be able to (Outcomes)

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	ASSIGNMENT **Unit-VI**	2015-16 Regulation: R12

Assignment / Questions

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN **Unit-VII**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	Mobile Ad hoc Networks Introduction	50 Min	TB1, TB2	
2	Properties of a MANET, spectrum of MANET	50 Min	TB1,RB2	
3	applications, routing	50 Min	TB1, RB1	
4	various routing algorithms	50 Min	TB1, RB1	
5	Security in MANETs.	50 Min	TB2	

On completion of this lesson the student shall be able to

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	ASSIGNMENT **Unit-VII**	2015-16 Regulation: R12

Assignment / Questions:

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.

	LESSON PLAN **Unit-VIII**	2015-16 Regulation: R12

Name of the Faculty: B.Deepthi Reddy

Subject WNMC Subject Code 6757081

INSTRUCTIONAL OBJECTIVES:

Session No	Topics to be covered	Time	Ref	Teaching Method
1	**Protocols and Tools :** Wireless Application Protocol-WAP: Introduction,	50 Min	TB1, TB2	
2	protocol architecture	50 Min	TB1,RB2	
3	Treatment of protocols of all layers.	50 Min	TB1, RB1	
4	**Bluetooth:** User scenarios, physical Layer,	50 Min	TB1, RB1	
5	MAC layer, networking	50 Min	TB2	

On completion of this lesson the student shall be able to

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	ASSIGNMENT **Unit-VIII**	2015-16 Regulation: R12

Assignment / Questions:

Signature of Faculty

Note: Mention for each question the relevant objectives and outcomes.