

TCET/FRM/IP-02/09

**Semester Plan
(Theory)**

Revision: A

Semester: VII

Course: IT

Subject: ITC- 704: Wireless Technology

Class: BE IT -A

| S.No. | Prerequisite/ Bridge course: | Duration (Week /Hrs) | Modes of Learning | Recommended Sources |
|-------|--|----------------------|----------------------------|---|
| 1 | Fundamentals of wireless communication, LAN & WAN topology ,Layered architecture ,WLAN | 6 hours | Self Learning/ Revision | 1. Fundamentals of Wireless Communication by David Tse, Pramod Viswanath, Cambridge University Press, 2. Computer Networks by Tanenbaum, Pearson |

Class Room Teaching

| Sr. No. | Module No. | Lesson No. | Topics Planned (Technology to be used) | Teaching Aids Required | Planned /Completion Date | Resource Book Reference | Remarks |
|---------|------------|------------|--|---|--------------------------|-------------------------|---------|
| 1 | --- | L1.1 | SOP-Theory Introduction to Wireless Communication | Power point presentation, Chalk & Board | 11/07/2017 | | |
| | | | | | 11/07/2017 | | |
| 2 | ---- | L1.2 | SOP-OBE | Power point presentation, Chalk & Board | 14/07/2017 | 1.6.2 | |
| | | | | | 14/07/2017 | | |
| 3 | Module 3 | L2.1 | Wireless in local loop(WLL) :User requirements of WLL systems, WLL system architecture | Power point presentation, Chalk & Board | 18/07/2017 | 3.6.1, 3.6.2 | |
| | | | | | 18/07/2017 | | |
| 4 | Module 3 | L2.2 | LMDS, MMDS | Power point presentation, Chalk & Board | 19/07/2017 | 3.6.3, 3.6.4 | |
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| 5 | Module 3 | L3.1 | WLL subscriber terminal, WLL interface to the PSTN | Power point presentation, Chalk & Board | 26/07/2017 | 3.6.5, 3.6.6 | |
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| 6 | Module 3 | L3.2 | Introduction to wireless local area Networks, WLAN Equipment | Power point presentation, Chalk & Board | 27/07/2017 | 3.6.7, 3.6.2 | |
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| 7 | Module 3 | L4.1 | Wireless LAN Technologies | Power point presentation, Chalk & Board | 02/08/17 | 3.6.3 | |
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| 8 | Module 3 | L4.2 | IEEE 802.11 WLAN : Architecture | Power point presentation, Chalk & Board | 03/08/17 | 3.6.4 | |
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| 9 | Module 3 | L5.1 | IEEE 802.11 WLAN : Physical Layer,Data Link Layer | Power point presentation, Chalk & Board | 09/08/17 | 3.6.5, 3.6.6 | |
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|---------|------------|------------|--|---|--------------------------|-------------------------|---------|
| 10 | Module 3 | L5.2 | MAC Layer, Security | Power point presentation, Chalk & Board | 10/08/17 | 3.6.7, 3.6.8 | |
| 11 | Module 3 | L6.1 | Latest developments of IEEE 802.11 standards | Power point presentation, Chalk & Board | 16/08/2017 | 3.6.9 | |
| 12 | Module 4 | L6.2 | Wireless personal area networks (WPAN) Introduction to Wireless personal area Network | Power point presentation, Chalk & Board | 19/08/2017 | 4.6.1 | |
| 13 | Module 4 | L7.1 | WPAN technologies and Protocols | Power point presentation, Chalk & Board | 24/08/2017 | 4.6.2 | |
| 14 | Module 4 | L8.1 | Bluetooth (802.15.1)(Protocol stack) | Power point presentation, Chalk & Board | 30/08/2017 | 4.6.3 | |
| 15 | Module 4 | L8.2 | Bluetooth (802.15.1)(network connection establishment, security aspects) | Power point presentation, Chalk & Board | 31/08/2017 | 4.6.4 | |
| 16 | Module 4 | L9.1 | HR –WPAN (UWB) (IEEE 802.15.3) | Power point presentation, Chalk & Board | 6/9/2017 | 4.6.5 | |
| 17 | Module 4 | L9.2 | LR-WPAN (IEEE 802.15.4) | Power point presentation, Chalk & Board | 7/9/2017 | 4.6.6 | |
| 18 | Module 4 | L10.1 | Zigbee (Stack architecture) | Power point presentation, Chalk & Board | 13/09/2017 | 4.6.7 | |
| 19 | Module 4 | L10.2 | Zigbee components, Network Topologies, Applications) | Power point presentation, Chalk & Board | 14/09/2017 | 4.6.7 | |
| 20 | Module 5 | L10.3 | Wireless metropolitan area networks: Wireless Sensor networks(Network model and protocol stack,] | Power point presentation, Chalk & Board | 16/09/2017 | 5.6.1 | |
| 21 | Module 5 | L11.1 | Wireless Sensor networks(routing algorithms,applications] | Power point presentation, Chalk & Board | 20/09/2017 | 4.6.2 | |
| 22 | Module 5 | L11.2 | IEEE 802.16 [Protocol Architecture] | Power point presentation, Chalk & Board | 21/09/2017 | 5.6.3 | |
| 23 | Module 5 | L13.1 | IEEE 802.16a [Wimax], Wimax and LTE /3GPP comparison | Power point presentation, Chalk & Board | 4/10/2017 | 5.6.4, 5.6.5 | |

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|--|------------|--------------------|--|--|--|---|---------|
| 24 | Module 3-5 | L13.2 | Revision / Practice Session | Power point presentation, Chalk & Board | 5/10/2017 | ---- | |
| 25 | Module 3-5 | L14.1 | Revision / Practice Session | Chalk & Board | 12/10/2017 | ---- | |
| 26 | Module 3-5 | L15.1 | University Paper Discussion | Chalk & Board | 18/10/2017 | ---- | |
| Remark: | | Syllabus Coverage: | | Practice Session: 2 | | Content Beyond Syllabus: Case Study on 4G | |
| Course: | | | | | | | |
| No. of (lectures planned)/(lecture taken): 26 | | | | | | | |
| Advanced course: Wireless communication | | | 20 Hours | Online NPTEL videos with Hands on Training in Laboratory | Web sources: 1. http://nptel.ac.in/courses/117102062/ 2. www.tutorialpoint.com 1. Instructor's study material, Textbook reference: 1. Wireless communications: by T L Singal; Tata McGraw Hill Education private Ltd. (Edition 2011) | | |

Text Books:

- 1.1. **Modern wireless communication systems: by Simon Haykin, Michael Moher, adapted by David Koilpillai; Pearson (Indian edition 2011)**
- 1.2. **Wireless Networks: by Nicopolitidia, M S Obaidat, GI Papadimitriou; Wiley India (Student Edition 2010)**
- 1.3. **Wireless communications: by T L Singal; Tata McGraw Hill Education private Ltd. (Edition 2011)**

Reference Books:

1. **Wireless and Mobile Networks: Dr. Sunilkumar S. Manvi & Mahabaleshwar S. Kakkasageri.**
2. **Wireless Communications and Networking: by Vijay K. Garg**
3. **Wireless Communications: by Theodore S. Rappaport.**

Name & Signature of Faculty

Signature of HOD

Signature of Principal /Dean (Academics)

Mr. Yele Vijaykumar

Date:

Date:

Date:

Note:

- 1 Plan date and completion date should be in compliance
- 2 Courses are required to be taught with emphasis on resource book, course file, text books, reference books, digital references etc.
- 3 Planning is to be done for 15 weeks where 1st week will be AOP, 2nd -13th for effective teaching and 14th -15th week for effective university examination oriented teaching, mock practice session and semester consolidation.
According to university syllabus where lecture of 4 hrs/per week is mentioned minimum 55 hrs and in case of 3 lectures per week minimum 45 lectures are to be engaged are required to be engaged during the semester and therefore accordingly semester planning for delivery of theory lectures shall be planned.
- 4 In order to improve score in NBA, faculty members are also required to focus course teaching beyond university prescribed syllabus and measuring the outcomes w.r.t learning course and programme objectives.
- 5 Text books and reference books are available in syllabus. Here only additional references w.r.t. non-digital / digital sources can be written (if applicable)
- 6 Technology to be used in class room during lecture shall be written below the topic planned within the bracket.