

LESSON PLAN FOR SESSION: 2025-26

| DISCIPLINE | SEMESTER | NAME OF THE TEACHING FACULTY | |
|---|--|---|--|
| ETC ENGG. | 6th | MRS SOUMYASREE KALYANI PANDA, GUEST FACULTY(ETC) | |
| SUBJECT:- ADVANCE COMMUNICATION ENGINEERING LAB | NO. OF DAYS PER WEEK CLASS ALLOTED : 04 | SEMESTER FROM 22/12/2025 TO 18/04/2026 | |
| | | NO. OF WEEKS : 15 NOS. | |
| WEEKS | CLASS DAYS | THEORY TOPICS | |
| 1ST WEEK | 1ST | Setting up a fiber optic analog& digital link including source & detector. | |
| | 2ND | Setting up a fiber optic analog& digital link including source & detector. | |
| | 3RD | Setting up a fiber optic analog& digital link including source & detector. | |
| 2ND WEEK | 1ST | PRACTICE | |
| | 2ND | PRACTICE | |
| | 3RD | PRACTICE | |
| 3RD WEEK | 1ST | Study of losses in Optical Fiber: | |
| | 2ND | Study of losses in Optical Fiber: | |
| | 3RD | Study of losses in Optical Fiber: | |
| 4TH WEEK | 1ST | Measurement of Numerical aperture by using Optical Fibre Kit | |
| | 2ND | Measurement of Numerical aperture by using Optical Fibre Kit | |
| | 3RD | Measurement of Numerical aperture by using Optical Fibre Kit | |
| 5TH WEEK | 1ST | PRACTICE | |
| | 2ND | PRACTICE | |
| | 3RD | PRACTICE | |
| 6TH WEEK | 1ST | Setting of AM, FM, PWM, Modulator & Demodulator using optical fiber kit. | |
| | 2ND | Setting of AM, FM, PWM, Modulator & Demodulator using optical fiber kit. | |
| | 3RD | Setting of AM, FM, PWM, Modulator & Demodulator using optical fiber kit. | |
| 7TH WEEK | 1ST | PRACTICE | |
| | 2ND | PRACTICE | |
| | 3RD | PRACTICE | |
| 8TH WEEK | 1ST | Study the following experiments using EPABX Trainer Kit. | |
| | 2ND | Study the following experiments using EPABX Trainer Kit. | |
| | 3RD | Study the following experiments using EPABX Trainer Kit. | |
| 9TH WEEK | 1ST | Study the following experiments using EPABX Trainer Kit. | |
| | 2ND | Study the following experiments using EPABX Trainer Kit. | |
| | 3RD | Study the following experiments using EPABX Trainer Kit. | |
| 10TH WEEK | 1ST | Study of satellite communication Trainer Kit: | |
| | 2ND | Study of satellite communication Trainer Kit: | |
| | 3RD | Study of satellite communication Trainer Kit: | |
| 11TH WEEK | 1ST | Study of satellite communication Trainer Kit: | |
| | 2ND | Study of satellite communication Trainer Kit: | |
| | 3RD | Study of mobile communication Trainer Kit. | |
| 12TH WEEK | 1ST | Study of mobile communication Trainer Kit. | |
| | 2ND | Study of mobile communication Trainer Kit. | |
| | 3RD | Study of mobile communication Trainer Kit. | |
| 13TH WEEK | 1ST | Study of Rader Trainer Kit. | |
| | 2ND | Study of Rader Trainer Kit. | |
| | 3RD | Study of Rader Trainer Kit. | |
| 14TH WEEK | 1ST | Study of ISDN Trainer Kit. | |
| | 2ND | Study of ISDN Trainer Kit. | |
| | 3RD | Study of ISDN Trainer Kit. | |
| 15TH WEEK | 1ST | Visit to Telephone Exchange / Mobile Network / earth station / Rader Station. | |
| | 2ND | Visit to Telephone Exchange / Mobile Network / earth station / Rader Station. | |
| | 3RD | Visit to Telephone Exchange / Mobile Network / earth station / Rader Station. | |

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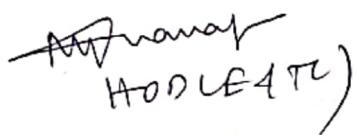


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| E&TC Engg | 6th | MRS SOUMYASREE KALYANI PANDA, GUEST FACULTY(ETC) | |
| ADVANCE COMMUNICATION ENGINEERING | NO. OF DAYS PER WEEK CLASS ALLOTED : 05 | SEMESTER FROM 22/12/2025 TO 18/04/2026 | |
| | | NO. OF WEEKS:- 15 NOS. | |
| WEEKS | CLASS DAYS | THEORY TOPICS | |
| 1st WEEK | 1ST | Basic Radar, advantages & applications | |
| | 2ND | Working principle of Simple Radar system , its types | |
| | 3RD | Radar range equation & Performance factor of radar | |
| | 4TH | Working principle of Pulsed Radar system | |
| | 5TH | Function of radar indication and Working principle of moving target indicator | |
| 2nd WEEK | 1ST | Define Doppler effect&Working principle of C.W Radar | |
| | 2ND | Radar aids to Navigation | |
| | 3RD | MTI Radar- working principle | |
| | 4TH | Aircraft landing system | |
| | 5TH | Navigation Satellite System.(NAVSAT) & GPS System | |
| 3rd WEEK | 1ST | Basic Satellite Transponder & Kepler's Laws | |
| | 2ND | Satellite Orbital patterns and elevation(LEO,MEO & GEO) categories | |
| | 3RD | Concept of Geostationary Satellite, calculate its height, velocity | |
| | 4TH | calculate the round trip time delay & their advantage & disadvantage | |
| | 5TH | Working of the Satellite sub system | |
| 4th WEEK | 1ST | Satellite frequency allocation and frequency bands | |
| | 2ND | General structure of satellite Link system (Uplink, Down link, Transponder, Crosslink) | |
| | 3RD | Working principle of direct broadcast system (DBS) | |
| | 4TH | Working principle of VSAT system | |
| | 5TH | Define multiple accessing & name various types | |
| 5th WEEK | 1ST | Time Division Multiple Accessing(TDMA) – block diagram, its advantages & dis-advantages | |
| | 2ND | Code Division Multiple Accessing (CDMA)- block diagram, its advantages & dis-advantages | |
| | 3RD | Satellite Application- Communication Satellite(MSAT), Digital Satellite Radio | |
| | 4TH | Working principle of GPS Receiver & Transmitter& applications | |
| | 5TH | Optical Satellite Link transmitter & Receiver | |
| 6th WEEK | 1ST | Basic principle of Optical communication, Compare the advantage and disadvantage of optical | |
| | 2ND | Electromagnetic Frequency and wave line spectrum | |
| | 3RD | Types of optical fibres&principles of propagation in a fibre using Ray | |
| | 4TH | Optical fiber construction | |
| | 5TH | Define terms: Velocity of propagation, Critical angle, Acceptance angle numerical aperture | |
| 7th WEEK | 1ST | Optical fibre communication system- block diagram & working principle | |
| | 2ND | Modes of propagation and index profile of optical fiber | |
| | 3RD | Types optical fiber configuration: Single-mode step index, Multi-mode step index, Multi-mode | |
| | 4TH | Attenuation in optical fibers – Absorption losses, scattering, losses, bending losses, core and cladding losses- Dispersion – material Dispersion, waveguide dispersion, Intermodal dispersion | |
| | 5TH | Optical sources(Transmitter) & types – LED- semiconductor laser diodes | |
| 8th WEEK | 1ST | LASER -its working principles, block diagram using laser feedback control circuit | |
| | 2ND | Optical detectors – PIN and APD diodes & Block diagram using APDConnectors and splices | |
| | 3RD | Optical repeater & Single Channel system | |
| | 4TH | Applications of optical fibres – civil, Industry and Military application | |
| | 5TH | Concept of Wave Length Division Multiplexing (WDM) principles | |
| 9th WEEK | 1ST | Working of Electronic Telephone System. (Telephone Set) | |
| | 2ND | Function of switching system | |
| | 3RD | Call procedures of switching system | |
| | 4TH | Space and time switching | |
| | 5TH | Numbering plan of telephone networks (National Schemes & International Numbering) | |
| 10th WEEK | 1ST | Working principle of a PBX | |
| | 2ND | Working principle of a Digital EPABX | |
| | 3RD | Units of Power Measurement | |
| | 4TH | Working principle of Internet Protocol Telephone | |
| | 5TH | Working principle of Internet Telephone | |

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| 11th WEEK | 1ST | Basic concept of Data Communication |
| | 2ND | Architecture, Protocols and Standards |
| | 3RD | Data Communication Circuits |
| | 4TH | Types of Transmission |
| | 5TH | Types of Transmission Modes |
| 12th WEEK | 1ST | Data Communication codes |
| | 2ND | Basic idea of Error control |
| | 3RD | Basic idea of Error Detection |
| | 4TH | MODEM & its basic block diagram |
| | 5TH | common features Voice Band modem |
| 13th WEEK | 1ST | Basic concept of Cell Phone, frequency reuse channel assignment |
| | 2ND | strategic handoff co-channel Interference and system capacity of a Cellular Radio systems |
| | 3RD | Concept of improving coverage |
| | 4TH | capacity in cellular system (Cell Splitting, Sectoring) |
| | 5TH | Wireless Systems and its Standards |
| 14th WEEK | 1ST | Discuss the GSM (Global System for Mobile) service and features |
| | 2ND | Architecture of GSM system & GSM mobile station |
| | 3RD | channel types of GSM system |
| | 4TH | working of forward and reverse CDMA channel, the frequency and channel specifications |
| | 5TH | Architecture and features of GPRS |
| 15th WEEK | 1ST | Discuss the mobile TCP, IP protocol |
| | 2ND | Working of Wireless Application Protocol (WAP) |
| | 3RD | Features of SMS, MMS, 1G, 2G WIRELESS NETWORK |
| | 4TH | Features of 3G, 4G & 5G Wireless network |
| | 5TH | Smart Phone and discuss its features indicate through Block diagram |


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| ETC ENGG. | 6TH | MRS SOUMYASREE KALYANI PANDA,GUEST FACULTY(ETC) | |
| SUBJECT:- INTERNET OF THINGS | | NO. OF DAYS PER WEEK CLASS ALLOTED : 04 | SEMESTER FROM 22/12/2025 TO 18/04/2026 NO. OF WEEKS : 15 NOS. |
| 1ST WEEK | 1st | What Is IoT.Architectural Overview of IOT. | |
| | 2nd | Design principles and needed capabilities | |
| | 3rd | IoT Applications, Sensing, Actuation | |
| | 4th | Basics of Networking, M2M and IoT Technology | |
| 2ND WEEK | 1st | Fundamentals- Devices and gateways | |
| | 2nd | Data management, Business processes in IoT | |
| | 3rd | Everything as a Service(XaaS) | |
| | 4th | Role of Cloud in IoT, Security aspects in IoT | |
| 3RD WEEK | 1st | Hardware Components- Computing (Arduino, Raspberry Pi) | |
| | 2nd | Hardware Components- Computing (Arduino, Raspberry Pi) | |
| | 3rd | Communication, Sensing, Actuation, I/O interfaces. | |
| | 4th | Communication, Sensing, Actuation, I/O interfaces. | |
| 4TH WEEK | 1st | Software Components- Programming API's (using Python/Node.js/Arduino) for Communication | |
| | 2nd | Software Components- Programming API's (using Python/Node.js/Arduino) for Communication | |
| | 3rd | Software Components- Programming API's (using Python/Node.js/Arduino) for Communication | |
| | 4th | Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP. | |
| 5TH WEEK | 1st | Protocols-MQTT, ZigBee, Bluetooth, CoAP, UDP, TCP. | |
| | 2nd | Solution framework for IoT applications | |
| | 3rd | Solution framework for IoT applications | |
| | 4th | Implementation of Device integration | |
| 6TH WEEK | 1st | Implementation of Device integration | |
| | 2nd | Data acquisition and integration | |
| | 3rd | Data acquisition and integration | |
| | 4th | Device data storage- Unstructured data storage on cloud/local server | |
| 7TH WEEK | 1st | Device data storage- Unstructured data storage on cloud/local server, | |
| | 2nd | Authentication, authorization of devices | |
| | 3rd | Authentication, authorization of devices | |
| | 4th | Understanding the IoT Big Picture | |
| 8TH WEEK | 1st | Understanding the IoT Big Picture | |
| | 2nd | Building the Internet of Things | |
| | 3rd | Building the Internet of Things | |
| | 4th | Understanding Smart Devices,Building Blocks | |
| 9TH WEEK | 1st | Understanding Smart Devices,Building Blocks | |
| | 2nd | Understanding Network Conections | |
| | 3rd | Understanding Network Conections | |
| | 4th | Understanding IP Adresses | |
| 10TH WEEK | 1st | Understanding IP Adresses | |
| | 2nd | Understanding cellular Network & Mesh Network | |
| | 3rd | Understanding cellular Network & Mesh Network | |

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| | 4th | Smart TVs: Viewing In a Connected World |
| 11TH WEEK | 1ST | Smart TVs: Viewing In a Connected World |
| | 2nd | Explain Smart TV & Its use |
| | 3rd | Explain Smart TV & Its use |
| | 4th | What is Inside Smart TV |
| 12TH WEEK | 1st | What is Inside Smart TV |
| | 2nd | What a Smart TV does |
| | 3rd | What a Smart TV does |
| | 4th | What a Smart TV does |
| 13TH WEEK | 1ST | Smart TV Operating Systems |
| | 2nd | Smart TV Operating Systems |
| | 3rd | Define Smart TV Set-Top Devices, briefly explain its each blocks |
| | 4th | Define Smart TV Set-Top Devices, briefly explain its each blocks |
| 14TH WEEK | 1st | Integrating Smart TV in to IOT |
| | 2nd | Integrating Smart TV in to IOT |
| | 3rd | case studies on smart Home |
| | 4th | case studies on smart car |
| 15TH WEEK | 1st | case studies on cities |
| | 2nd | case studies on drone |
| | 3rd | Industrial Automation |
| | 4th | Industrial Automation |

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