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# CIRCULAR

It is to inform to all the students of Electronics and communication engineering that Mentors have been allotted for counseling. The details of mentors and mentees will be placed in the department notice board

Hence all the students are instructed to contact their mentors as per the details given

Head of the Department

Head of the Department
Electronics & Communication Engg
KKR & KSR Institute of Technology & Sciences

C.C.to.

All the Faculty

Notice Board

Department Office

# KITS KKR & KSR INSTITUTE OF TECHNOLOGY AND SCIENCES

(Approved by AICTE, New Delhi, Affiliated to JNTUK, Kakinada, Accredited with 'A' grade by NAAC)
(AUTONOMOUS)

## Department of Computer Science and Engineering

**Subject Name:** INTRODUCTION TO IOT
**Course Code:** 20EC6O04
**Name of the faculty:** Dr CH.ARUNA/Mrs.G.NAGA PAVANI
**Academic Year:** 2022-23
**Year/Sem:** III/II
**Regulation:** R20

**LESSON PLAN**

| S. NO | L./T. No. | Topics covered | Teaching Aid | Text Book/ Reference no. |
|---|---|---|---|---|
| | | **UNIT-I – INTRODUCTION TO IOT** | | |
| 1 | L-01 | An Overview of Internet of things | GB & PC | T1:01 |
| 2 | L-02-03 | IoT Conceptual Frame Work | GB & PC | T1:03 |
| 3 | L-04 | Architectural Overview | GB & PC | T1:14 |
| 4 | L-05 | M2M Communication | GB & PC | T1:31 |
| 5 | L-06-07 | Technology Behind IoT | GB & PC | T1:37 |
| 6 | L-08 | Major Components of IoT System | GB & PC | T1:38 |
| 7 | L-09 | Role of Cloud in IoT | GB & PC | T1:39 |
| 8 | L-10 | Examples of IoT | GB & PC | T1:41 |
| 9 | L-11 | Revision on unit-1 | GB & PC | T1:01-41 |
| | | **UNIT-II - Design Standards of IoT** | | |
| 10 | L-17 | Hardware Computing Components | GB & PC | T2:92 |
| 11 | L-18 | Arduino | GB & PC | T2:94 |
| 12 | L-19 | Rasp berry Pi | GB & PC | T2:91 |
| 13 | L-20 | Device Management | GB & PC | T2:91 |
| 14 | L-21 | Data Enrichments | GB & PC | T2:99 |
| 15 | L-22 | Consolidation at Gate ways | GB & PC | T2:100 |
| 16 | L-23 | Business Models for Business Processes in the Internet of Things | GB & PC | T2:110 |
| 17 | L-24 | IoT/M2M systems LAYERS AND designs standardizations | GB & PC | T2:100 |
| 18 | L-25 | Modified OSI Stack for the IOT/M2M Systems | GB & PC | T2:111 |
| 19 | L-26 | ETSI M2Mdomains and High-level capabilities | GB & PC | T2:113 |
| 20 | L-27 | Communication Technologies | GB & PC | T2:123 |
| 21 | L-28 | Ease of Designing and Affordability. | GB & PC | T2:130 |
| 22 | L-29 | Revision on unit-2 | GB & PC | T2:132 |
| | | **UNIT-III – IoT Application Development** | | |
| 23 | L-30 | IoT Applications | GB & PC | T1:219 |
| 24 | L-31 | Internet Connectivity for Communication | GB & PC | T1:222 |
| 25 | L-32 | Sensing | GB & PC | T1:233 |
| 26 | L-33 | Wireless Sensor Network | GB & PC | T1:222 |
| 27 | L-34 | RFID, Actuation | GB & PC | T1:222 |
| 28 | L-35 | I/O Interfaces | GB & PC | T1:224 |
| 29 | L-36 | Connectivity and Communication Protocols | GB & PC | T1:226 |
| 30 | L-37 | MQTT | GB & PC | T1:224 |
| 31 | L-38 | SOAP ,CoAP | GB & PC | T1:225 |
| 32 | L-39 | UDP ,TCP ,Bluetooth | GB & PC | T1:227 |
| 33 | L-40 | HTTP, HTTPS | GB & PC | T1:229 |

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|---|---|---|---|---|
| 34 | L-41 | FTP, TELNET | GB & PC | T1:231 |
| 35 | L-42 | REST and Restful Environment in IoT. | GB & PC | T1:234 |
| 36 | L-43 | Revision on unit-3 | GB & PC | T1:236 |
| **UNIT-IV-Business Models and Processing Solution Framework** | | | | |
| 45 | L-52 | Business Models and Business Models Innovation | GB & PC | T1:450 |
| 46 | L-53 | Business Model Scenarios for IoT | GB & PC | T1:465 |
| 47 | L-54 | Implementation of Device integration | GB & PC | T1:467 |
| 48 | L-55 | Data Acquisition | GB & PC | T1:485 |
| 49 | L-56 | Integration ,Storage and Analytics | GB & PC | T1:487 |
| 50 | L-57 | Cloud Computing Paradigm for Data Collection | GB & PC | T1:489 |
| 51 | L-58 | Storage and Computing | GB & PC | T1:507 |
| 52 | L-59 | IoT Cloud Based Services using the Xively and Nimbits | GB & PC | T1:509 |
| 53 | L-60 | Everything as a Service and Cloud Service Models | GB & PC | T1:515 |
| 54 | L-61 | Revision on unit-4 | GB & PC | T1:520 |
| **UNIT-V- IoT Case Studies** | | | | |
| 55 | L-62 | IoTcasestudiesandminiprojectsbasedonIndustrialAutomation | GB & PC | T1:745 |
| 56 | L-63 | IoTcasestudiesandminiprojectsbasedonIndustrialAutomation | GB & PC | T1:747 |
| 57 | L-64 | Transportation, | GB & PC | T1:749 |
| 58 | L-65 | Healthcare | GB & PC | T1:754 |
| 59 | L-66 | Home Automation | GB & PC | T1:755 |
| 60 | L-67 | Environment Monitoring and other | GB & PC | T1:757 |
| 61 | L-68 | Revision on unit-5 | GB & PC | T1:758 |

**TEXTBOOKS:**


1. Raj Kamal, "Internet of Things: Architecture and Design Principles", 1st Edition, McGrawHill Education, 2017.

2. Internet of Things, A.Bahgya and V.Madisetti, Univesity Press, 2015


**REFERENCES:**


1. Designing the Internet of Things, Adrian McEwen and Hakim Cassimally, Wiley.
2. Getting Started with the Internet of Things CunoP fister , Oreilly.
3. PethuruRajandAnupamaC.Raman,"TheInternetofThings:EnablingTechnologies,Platforms, and Use Cases", CRC Press, 2017.
4. Cypress Semi conductor /PSoC4BLE(Bluetooth Low Energy) Product Training Modules.


**WEB REFERENCES:**

1. https://onlinecourses.nptel.ac.in/noc23_cs51/preview
2. https://youtu.be/GHUR_GfQQsQ
3. https://youtu.be/0KtGwhwImOM

**Faculty**

**Head of the Department**

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## Department of Computer Science and Engineering

**Subject Name:** PROBABILITY &STATISTICS
**Course Code: 20SH4T01**
**Name of the faculty: Dr.K.BHAGYALAKSHMI**
**Academic Year**: 2022-23
**Year/Sem:** II/II (CSE)
**Regulation:** R20

### LESSON PLAN

| S. NO | L./T. No. | Topics covered | Teaching Aid | Text Book/ Reference no. |
|---|---|---|---|---|
| | | **UNIT-I – Random Variables** | | |
| 1 | L-01 | Introduction to Probability | GB & PC | T2:3.3-3.42 |
| 2 | L-02 | Problems on conditional probability | GB & PC | T2:3.43-3.79 |
| 3 | L-03 | Random variables introduction | GB & PC | T2:5.2-5.3 |
| 4 | L-04 | Problems on Discrete random variables | GB & PC | T2:5.5-5.36 |
| 5 | L-05 | Problems on Discrete random variables | GB & PC | T2:5.5-5.36 |
| 6 | **T-01** | Tutorial on discrete random variables | | |
| 7 | L-06 | Problems on Discrete random variables | GB & PC | T2:5.5-5.36 |
| 8 | L-07 | Problems on Discrete random variables | GB & PC | T2:5.5-5.36 |
| 9 | L-08 | Distribution function | GB & PC | T2:5.4-5.5 |
| 10 | L-09 | Mathematical Expectation and Variance | GB & PC | T2:5.5-5.36 |
| 11 | **T-02** | Problems on Discrete random variables | | |
| 12 | L-10 | Continuous random variables introduction | GB & PC | T2:5.2-5.3 |
| 13 | L-11 | Problems on continuous random variables | GB & PC | T2:5.5-5.36 |
| 14 | L-12 | Problems on continuous random variables | GB & PC | T2:5.5-5.36 |
| 15 | L-13 | Relation between Density function Distribution function | GB & PC | T2:5.4-5.5 |
| 16 | L-14 | Mathematical Expectation and Variance | GB & PC | T2:5.5-5.36 |
| 17 | **T-03** | Problems on continuous random variables | | |
| | | **UNIT-II –Probability Distributions and sampling distributions** | | |
| 18 | **L-15** | Problems on Binomial Distribution | GB & PC | T2:8.4-8.22 |
| 19 | L-16 | Problems on Normal Distribution | GB & PC | T2:9.3-9.23 |
| 20 | L-17 | Problems on Normal Distribution | GB & PC | T2:9.3-9.23 |
| 21 | **T-04** | Problems on Binomial Distribution | | |
| 22 | L-18 | constants of Normal Distribution | GB & PC | T2:9.3-9.23 |
| 23 | L-19 | Characteristics of Normal Distribution | GB & PC | T2:9.3-9.23 |
| 24 | L-20 | Applications of normal distribution | GB & PC | T2:9.3-9.23 |
| 25 | **T-05** | Problems on Normal Distribution | | |
| 26 | L-21 | Problems on Sampling distribution of means with replacement | GB & PC | T2:14.2-14.11 |
| 27 | L-22 | Problems on Sampling distribution of means without replacement | GB & PC | T2:14.2-14.11 |
| 28 | L-23 | Problems on Sampling distribution of means and Variances | GB & PC | T2:14.2-14.11 |
| 29 | L-24 | Problems on Sampling distribution of means and Variances | GB & PC | T2:14.2-14.11 |
| 30 | L-25 | Problems on sampling distribution with replacement and without replacement. | GB & PC | T2:14.2-14.11 |
| 31 | L-26 | Problems on Sampling distribution of means and Variances | GB & PC | T2:14.2-14.11 |
| 32 | **T06** | Problems on sampling distribution of variances | | |

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|---|---|---|---|---|
| **UNIT-III – Estimation and test of hypothesis of means** | | | | |
| 33 | L-27 | Introduction to estimation | GB & PC | T1:237 |
| 34 | L-28 | Problems on point estimation | GB & PC | T1:237 |
| 35 | L-29 | Problems on Interval estimation | GB & PC | T1:249 |
| 36 | L-30 | Maximum error of estimate | GB & PC | T1:250 |
| 37 | **T07** | Tutorial on estimation | | |
| 38 | L-31 | Introduction to Hypothesis | GB & PC | T2.18.2-18.3 |
| 39 | L-32 | Null and Alternative Hypothesis | GB & PC | T2.18.3-18.5 |
| 40 | L-33 | Type I and Type II errors | GB & PC | T2.18.5-18.6 |
| 41 | L-34 | Level of Significance | GB & PC | T2:18.6 |
| 42 | L-35 | Test concerning one mean | GB & PC | T2:14.25-14.30 |
| 43 | L-36 | Test concerning one mean | GB & PC | T2:14.25-14.30 |
| 44 | **T08** | Tutorial on procedure of test of Hypothesis | | |
| 45 | L-37 | Problems on test concerning two means | GB & PC | T2:14.30-14.36 |
| 46 | L-38 | Problems on test concerning two means | GB & PC | T2:14.30-14.36 |
| **UNIT-IV – Estimation and Test of Hypothesis of Variances and Proportions** | | | | |
| 47 | L-39 | Problems on test concerning single proportion | GB & PC | T2:14.2-14.14 |
| 48 | L-40 | Problems on test concerning single proportion | GB & PC | T2:14.2-14.14 |
| 49 | L-41 | Problems on test concerning two proportion | GB & PC | T2:14.15-14.23 |
| 50 | **T09** | Tutorial on Test of hypothesis of proportions | | |
| 51 | L-42 | Problems on students t-test | GB & PC | T2:16.12-16.18 |
| 52 | L-43 | Problems on paired t-test | GB & PC | T2:16.18-16.26 |
| 53 | L-44 | Problems on F-test | GB & PC | T2:15.26-15.37 |
| 54 | L-45 | Problems on chi-square test | GB & PC | T2:15.26-15.37 |
| 55 | **T10** | Tutorial on small samples | | |
| | | **UNIT-V – Regression Analysis** | | |
| 56 | L-46 | Introduction to method of least squares | GB & PC | T2:17.46,20.08 |
| 57 | L-47 | Fit a straight line by method of least squares | GB & PC | T2:17.46,20.08 |
| 58 | L-48 | Fit a Parabola | GB & PC | T2:17.46,12.19 |
| 59 | L-49 | Fit an exponential curve | GB & PC | T2:17.46 |
| 60 | **T11** | Tutorial on curve fitting | | |
| 61 | L-50 | Fit a power curve | GB & PC | T2:17.46 |
| 62 | L-51 | Introduction to Correlation | GB & PC | T2:10.2-10.3 |
| 63 | L-52 | Calculation of Correlation coefficient | GB & PC | T2:10.4-10.22 |
| 64 | L-53 | Problems on rank correlation | GB & PC | T2:10.23-10.28 |
| 65 | **T12** | Tutorial on Correlation Coefficient | | |
| 66 | L-54 | Problems on rank correlation | GB & PC | T2:10.23-10.28 |
| 67 | L-55 | Regression coefficient and properties | GB & PC | T2:11.2-11.19 |
| 68 | **T13** | Problems on rank correlation | | |
| 69 | L-56 | Regression lines | GB & PC | T2:11.2-11.19 |
| 70 | L-57 | Problems on multiple regression | GB & PC | T2:11.2-11.19 |

**TEXT BOOKS:**

1. Richard A.Johnson, Miller and Freund's, Probability and Statistics for Engineers, 8/e, PHI Learning India Private Limited, 2011.

2. S.C.Gupta and V.K.Kapoor, Fundamentals of Mathematical Statistics,11/e, Sultan Chan& Sons Publications, 2012.

**REFERENCE BOOKS:**

1.S.Ross, A first Course in Probability, Pearson Education India, 2002.

2. W.Feller, An Introduction to Probability Theory and its Applications, 1st edition, Wiley, 1968.

3.ShronL.Myers, Keying Ye, Ronald E Walpole, Probability and Statistics Engineers and the Scientists, 8th Edition, Cengage.
4. Jay I.Devore, Probability and Statistics for Engineering and the Sciences, 8th Edition, Cengage.
5. Sheldon M. Ross, Introduction to probability and statistics Engineers and the Scientists, 4th Edition, Academic Foundation, 2011.
6.Johannes Ledolter and Robert V. Hogg, Applied Statistics for Engineers and Physical Scientists, 3rd Edition, Pearson, 2010.

K. Bhagyalakshmi
**FACULTY**

R. Ramesh
**Head of the Department**

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DEPARTMENT OF CSE - DATA SCIENCE

**Subject Name:** SOFTWARE ENGINEERING **Course Code:** 20CD5E11

**Name of the faculty:** Y.prasanthi **Academic Year:** 2022-23

**Year/Sem:** III/I **Regulation:**R20

LESSON PLAN

| S. NO | L./T. No. | Topics covered | Teaching Aid | Text Book/ Reference no. |
|---|---|---|---|---|
| **UNIT-I – INTRODUCTION TO SOFTWARE ENGINEERING.** | | | | |
| 1 | L-01 | Software, The Nature of Software | GB & PC | T1:03 |
| 2 | L-02 | Software Myths | GB & PC | T1:21 |
| 3 | L-03 | The Software Process | GB & PC | T1:29 |
| 4 | L-04 | A Generic Process Model | GB & PC | T1:31 |
| 5 | L-05 | CMMI | GB & PC | T1:37 |
| 6 | **T-01** | PROCESS MODELS | | |
| 8 | L-06 | Prescriptive Process Models | GB & PC | T1:38 |
| 9 | L-07 | The Waterfall Model | GB & PC | T1:39 |
| 10 | L-08 | Incremental Process Models | GB & PC | T1:41 |
| 11 | L-09 | Evolutionary Process Models | GB & PC | T1:42 |
| 12 | L-10 | Concurrent Models | GB & PC | T1:48 |
| 13 | L-11 | Specialized Process Models | GB & PC | T1:50 |
| 14 | L-12 | The Unified Process. | GB & PC | T1:53 |
| **UNIT-II SOFTWARE REQUIREMENTS.** | | | | |
| 19 | L-13 | Introduction of Requirement | GB & PC | T1:120 |
| 20 | L-14 | User Requirements | GB & PC | T1:125 |
| 21 | L-15 | System requirements | GB & PC | T1:126 |
| 22 | L-16 | Functional and Non-functional Requirements | GB & PC | T1:127 |
| 23 | L-17 | The Requirement Engineering Process | GB & PC | T1:127 |
| 24 | **T-02** | Requirements Elicitation | | |
| 25 | L-18 | Fact finding Techniques | GB & PC | T1:128 |
| 26 | L-19 | Data/system Analyst | GB & PC | T1:131 |
| 27 | **T-03** | Requirement Analysis | GB & PC | T1:149 |
| 28 | L-20 | Structured Analysis | GB & PC | T1:153 |
| 29 | L-21 | Data oriented Analysis | GB & PC | T1:164 |
| 30 | L-22 | Object oriented Analysis | GB & PC | T1:167 |
| 31 | L-23 | Prototype. | GB & PC | T1:168 |
| 32 | **T-04** | Requirement Specification | NPTEL VIDEO | T1:170 |
| 33 | L-24 | SRS | | |
| 34 | L-25 | Characteristics and Components of SRS | GB & PC | T1:173 |
| 35 | L-26 | Requirements Validation | GB & PC | T1:175 |
| 36 | L-27 | Requirements Management | GB & PC | T1:176 |
| **UNIT-III - DESIGN ENGINEERING:** | | | | |
| 37 | L-28 | The Design Process | GB & PC | T1:219 |
| 38 | L-29 | Design Concepts | GB & PC | T1:222 |
| 39 | L-30 | The Design Model. | GB & PC | T1:233 |

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|---|---|---|---|---|
| 40 | T-05 | ARCHITECTURAL DESIGN. | | |
| 41 | L-31 | Software Architecture | GB & PC | T1:243 |
| 42 | L-32 | Architectural Styles | NPTEL VIDEO | T1:249 |
| 43 | L-33 | Architectural Design | GB & PC | T1:255 |
| 44 | L-34 | Architectural Mapping using Data Flow | GB & PC | T1:265 |
| | | **UNIT-IV - SOFTWARE TESTING STRATEGIES** | | |
| 55 | L-35 | A Strategic Approach to Software Testing | GB & PC | T1:450 |
| 56 | L-36 | Test Strategies for Conventional Software and Object Oriented Software | GB & PC | T1:456&465 |
| 57 | L-37 | Validation Testing | GB & PC | T1:467 |
| 58 | L-38 | White- Box Testing | GB & PC | T1:485 |
| 59 | L-39 | Basis Path Testing | GB & PC | T1:485 |
| 60 | L-40 | Black-Box Testing | GB & PC | T1:495 |
| 61 | L-41 | System Testing | GB & PC | T1:470 |
| | | **UNIT-V** | | |
| 65 | T-06 | RISK MANAGEMENT | | |
| 66 | L-42 | Reactive versus Proactive Risk Strategies | GB & PC | T1:745 |
| 67 | L-43 | Risk Identification | GB & PC | T1:747 |
| 68 | L-44 | Risk Projection | GB & PC | T1:749 |
| 69 | L-45 | Risk Refinement | GB & PC | T1:754 |
| 70 | L-46 | RMMM | GB & PC | T1:755 |
| 71 | L-47 | RMMM Plan | GB & PC | T1:757 |
| 72 | T-07 | QUALITY MANAGEMENT | | |
| 73 | L-48 | Software Quality | GB & PC | T1:400 |
| 74 | L-49 | Informal Reviews | GB & PC | T1:424 |
| 75 | L-50 | Formal Technical Reviews | GB & PC | T1:426 |
| 76 | L-51 | Statistical Software Quality Assurance | GB & PC | T1:439 |
| 77 | L-52 | Software Reliability | PPT | T1:442 |

**Text Books:**

1. Roger S.Pressman, Software Engineering a Practitioner s Approach, 7thEdition, TMH,2010.
2. Sommerville, Software Engineering, 9thEdition, Pearson Education, 2011.

**Reference Books:**

1. K.K.Agarwal & Yogesh Singh, Software Engineering, 3rdEdition, New Age International Publishers, 2008.
2. PankajJalote, An Integrated Approach to Software Engineering, 3rd Edition, Narosa PublishingHouse,2011.

**e-Resources:**

1. https://nptel.ac.in/Courses/SoftwareEngineering 2.
https://www.Coursera.org/Courses?query=software engineering 3.
.https://www.udemy.com/Courses/development/software-engineering

Faculty

Head of the Dept

# KKR & KSR INSTITUTE OF TECHNOLOGY & SCIENCES

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## Lesson Plan

**Faculty Name: Mr. N. Sri Prakash/ Mrs. Sd. Vaheeda** **Semester -II**
**Academic Year : 2022-23** **Class: III B.tech (ECE-1,2&3)**
**Subject : Embedded Systems**

| S.No | Name of the topic | Teaching Aid | Reference | Page No |
|---|---|---|---|---|
| **1. Introduction & Characteristics of an Embedded Systems** | | | | |
| Lecture -1 | Introduction to Embedded System, History of ES | GB&CP | T1 | 4-5 |
| Lecture -2 | Classification of ES | GB&CP | T1 | 6 |
| Lecture -3 | Application areas | GB&CP | T1 | 7 |
| Lecture -4 | Memory | GB&CP | T1 | 28-34 |
| Lecture -5 | Sensors & Actuators | GB&CP | T1 | 35-44 |
| Lecture -6 | Communication Interface | GB&CP | T1 | 45-58 |
| Lecture -7 | Embedded firmware | PPTs/Presentation (Still & | T1 | 59 |
| Lecture -8 | Characteristics of ES | GB&CP | T1 | 72-73 |
| Lecture -9 | Quality attributes of an Embedded systems | GB&CP | T1 | 74 |
| Lecture -10 | Application-specific and Domain-Specific examples of an embedded system | GB&CP | T1 | 83-85 |
| **2. Embeddd Hardware Design** | | | | |
| Lecture -11 | Introduction to Embedded Hardware Design | GB&CP | T2 | 229 |
| Lecture -12 | Analog electronic components | GB&CP | T2 | 229 |
| Lecture -13 | Digital electronic components | NPTEL videos | T2 | 230 |
| Lecture -14 | I/O types and examples | GB&CP | R3 | 98-108 |
| Lecture -15 | Serial communication devices | GB&CP | R3 | 114-117 |
| Lecture -16 | Parallel device ports | GB&CP | R3 | 139 |
| Lecture -17 | Wireless devices | GB&CP | T1 | 45-55 |
| Lecture -18 | Timer devices | GB&CP | R3 | 109-113 |
| Lecture -19 | Counting devices | GB&CP | R3 | 109-113 |
| Lecture -20 | Watchdog timer | GB&CP | W4 | 63 |
| Lecture -21 | Real time clock | GB&CP | T2 | 62 |
| **3. Embeddd Firmware Design** | | | | |
| Lecture -22 | Introduction to Embedded Firmware Design | GB&CP | T2 | 302 |
| Lecture -23 | Embedded Firmware design approaches | GB&CP | T2 | 303-305 |
| Lecture -24 | Embedded Firmware development languages | GB&CP | T2 | 306-317 |

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|---|---|---|---|---|
| ecture -25 | Interrupt, ISR concept | GB&CP | T3 | 189-191 |
| ecture -26 | Interrupt sources, | GB&CP | T3 | 192-193 |
| ecture -27 | Interrupt servicing mechanism | GB&CP | R3 | 150-156 |
| Lecture -28 | Multiple interrupts | PPTs/Presentation (Still & Videos) | T3 | 196-205 |
| Lecture -29 | Direct Memory Access | GB&CP | R3 | 88-89 |
| Lecture -30 | Device driver programming | GB&CP | R3 | 130-138 |
| Lecture -31 | Concepts of C versus Embedded C | GB&CP | T2 | 318-319 |
| Lecture -32 | Compiler versus Cross-compiler | GB&CP | T2 | 319 |
| **4. Real Time Operating Systems& Embedded System Development** | | | | |
| Lecture -33 | Introduction to OS,Operating system basics | GB&CP | T1 | 382-385 |
| Lecture -34 | Types of operating systems, | GB&CP | T1 | 386-389 |
| Lecture -35 | Tasks, Process, Threads, | NPTEL videos | T1 | 390-401 |
| Lecture -36 | Multiprocessing and multiasking | GB&CP | T1 | 402-403 |
| Lecture -37 | Task Scheduling, schedulng, threads and process | GB&CP | T1 | 404-421 |
| Lecture -38 | Synchronization, Device Drivers | GB&CP | T1 | 426 |
| Lecture -39 | Task synchronization | GB&CP | T1 | 442 |
| Lecture -40 | Introduction to Embedded System Development | GB&CP | T1 | 557 |
| Lecture -41 | The integrated development environment | GB&CP | T1 | 557 |
| Lecture -42 | Types of files generated on cross-compilation | Seminars | T1 | 588 |
| Lecture -43 | Deassembler/Decompiler | GB&CP | T1 | 597 |
| Lecture -44 | Simulators, Emulators & Debugging, | GB&CP | T1 | 598 |
| Lecture -45 | Target hardware debugging | GB&CP | T1 | 606 |
| Lecture -46 | Embedded Software development process and tools | GB&CP | W3 | |
| Lecture -47 | Interpreters | GB&CP | T3 | 189-191 |
| Lecture -48 | Compilers and Linkers | PPTs/Presentation (Still & Videos) | W3 | |
| Lecture -49 | Quality assurance and testing of the design | GB&CP | W3 | |
| Lecture -50 | Testing on host machine | GB&CP | W3 | |
| Lecture -51 | Simulators | Seminars | W3 | |
| Lecture -52 | Laboratory Tools | GB&CP | W3 | |
| **5. Real Time Applications & Basic Programming using Keil and Proteus** | | | | |
| Lecture -53 | Real Time Applications: Digital camera hardware and software architecture | GB&CP | T2 | 534-535 |
| Lecture -54 | Embedded systems in automobile | GB&CP | T2 | 536-537 |
| Lecture -55 | Embedded system for a smart card | GB&CP | T2 | 593-595 |

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|---|---|---|---|---|
| ecture -56 | Mobile phone software for key inputs | GB&CP | T2 | 604-607 |
| ecture -57 | Basic Programming Using Keil and Proteus: LED interfacing programming using CC and CA | GB&CP | W4 | |
| Lecture -58 | Traffic light management system | GB&CP | W5 | |
| Lecture -59 | Seven segment display | GB&CP | W6 | |

| **Text Books** | |
|---|---|
| T1 | Embedded Systems Architecture- By Tammy Noergaard, Elsevier Publications,2013 |
| T2 | Embedded Systems-By Shibu. K.V-Tata McGraw Hill Education Private |
| T3 | Embedded systems design by steve Heath, second edition |

| **References Books** | |
|---|---|
| R1 | Embedded System Design, Frank Vahid, Tony Givargis, John Wiley |
| R2 | Embedded Systems-Lyla B.Das-Pearson Publications,2013 |
| R3 | Embedded Systems- Raj kamal - Hill publishing company limited ,2003 |

| **Web References** | |
|---|---|
| W1 | https://www.tutorialspoint.com/basics_of_embedded_c_programming_for_beginners/index.asp |
| W2 | https://lab4sys.com/en/download-proteus-software-version-8/amp/ |
| W3 | https://www.efaculty.in/c-language/concept-of-assembler-compiler-interpreter-loader-and-linker/ |
| W4 | https://electrosome.com/led-blinking-8051-microcontroller-keil-c-tutorial-atat89c51/ |
| W5 | Traffic Light System Using 8051 Micro Controller (electronicwings.com) |
| W6 | 7 Segment Display Interfacing with 8051 Microcontroller (AT89S52): Tutorial with Code & Circuit (circuitdigest.com) |

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2.

**Faculty I/C**
(Mr.N. Sri Prakash/Mrs. Sd. vaheeda)

**HOD,ECE**
Dr. N.Adinarayana

KITS

# KKR & KSR INSTITUTE OF TECHNOLOGY & SCIENCES
(AUTONOMOUS)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN

Faculty Name: Dr N.Adhinarayana/Bhavani.T
Academic Year: 2022-23

Smester:II
Calss:II /A,B,C

**Subject:ELECTROMAGNETIC WAVES and TRANSMISSION LINES**

| S.No | Lecture No. | Topic Name | Teaching Aid | Text Book / Reference Book / Web | Text Book/ Reference Book Page No |
|---|---|---|---|---|---|
| | **UNIT I: ELECTROSTATICS** | | | | |
| 1 | LECTURE 1 | Review of Co-ordinate Systems | GCB & CT | T1 | 5 to 15 |
| 2 | LECTURE 2 | Electrostatics:, Coulomb's Law | GCB & CT Chalk &Talk | T1 | 71 |
| 3 | LECTURE 3 | Electric Field Intensity, Electric Flux Density | GCB & CT | T1 | 90 |
| 4 | LECTURE 4,5 | Gauss Law and Applications | GCB & CT Chalk &Talk | T1 | 92 |
| 5 | LECTURE 6,7 | Electric Potential, Maxwell's Two Equations for Electrostatic Fields | GCB & CT | T1,R6 | 94-101,107,89- |
| 6 | LECTURE 8 | Energy Density, Illustrative Problems | GCB & CT | T1 | 114 |
| 7 | LECTURE 9 | Convection and Conduction Currents | GCB & CT Chalk &Talk | T1 | 134 |
| 8 | LECTURE 10 | Dielectric Constant, Continuity Equation, Relaxation Time, | GCB & CT | T1 | 146-147 |
| 9 | LECTURE 11 | Capacitance – Parallel Plate,Coaxial Capacitors, Illustrative Problems | GCB & CT | T1 | 214 |
| 10 | LECTURE 12 | illustrated problems | GCB & CT | E2,R4 | 2.37-2.41,61 |
| 11 | **UNIT II: Magneto Statics** | | | | |
| 12 | LECTURE 13 | Biot-Savart Law, Ampere's Circuital Law: | GCB & CT Chalk &Talk | T1,E2,T2 | 230,4.7,86 |
| 13 | LECTURE 14 | and Applications, Magnetic Flux Density, | GCB & CT | T1 | 2,41,249 |
| 14 | LECTURE 15 | Maxwell's Two Equations for Magnetostatic Fields, | GCB & CT | T1 | 2,41,251 |
| 15 | LECTURE 16,17 | Magnetic Scalar and Vector Potentials, Forces due to Magnetic Fields, | GCB & CT Chalk &Talk | T1 | 252 |
| 16 | LECTURE 18,19 | Ampere's Force Law, Inductances and Magnetic Energy. | GCB & CT | T1,T2 | 256,300 TO303,87- 89 |
| 17 | LECTURE 20,21 | Illustrative Problems. [1,5] Maxwell's Equations (Time Varying Fields) | GCB & CT | T1,R4 | 112-113,140 |
| 18 | LECTURE 21 | Faraday's Law and Transformer emf, Inconsistency of Ampere's Law | GCB & CT | T1 | 3,28,330 |
| 19 | LECTURE 22 | and Displacement Current Density, | GCB & CT | T1 | 339 |
| 20 | LECTURE 23 | Maxwell's Equations in Different Final Forms and Word Statements. | GCB & CT Chalk &Talk | T1 | 342 |
| 21 | LECTURE 24 | Dielectric-Conductor Interfaces. | GCB & CT | R4 | 296,140-143 |
| 22 | LECTURE 25 | Illustrative Problems | GCB & CT | E1 | 5.3, ABENIAN 10 |
| 23 | **UNIT III: EM Wave Characteristics** | | | | |
| 24 | LECTURE 26 | introduction | | | |

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|---|---|---|---|---|---|
| | LECTURE 27 | Wave Equations for Conducting | GCB & CT | R1 | 286 |
| | LECTURE 28 | and Perfect Dielectric Media | GCB & CT | R1 | 306 |
| | LECTURE 29 | Uniform Plane Waves – Definition, | GCB & CT Chalk &Talk | R1 | 287 |
| 8 | LECTURE 30 | All Relations Between E & H, | GCB & CT | R1 | 291 |
| 9 | LECTURE 31 | Sinusoidal Variations, Wave Propagation in | GCB & CT | R1 | 2,95,296 |
| 10 | LECTURE 32 | lossless dielectrics, free space, wave propagation in | GCB & CT | R1 | 295 |
| 11 | LECTURE 33 | skin depth, Polarization & Types | GCB & CT Chalk &Talk | R1 | 310-314 |
| 32 | LECTURE 34 | Illustrative Problems | GCB & CT Chalk &Talk | R1,E2 | 5.3 |
| 33 | LECTURE 35 | unit-1 old questions practice | | | |
| 34 | LECTURE 36 | Reflection and Refraction of Plane Waves | GCB & CT | R1 | 318 |
| 35 | LECTURE 37 | Normal and Oblique Incidences, for both Perfect Conductor | GCB & CT | R1 | 318 |
| 36 | LECTURE 38 | and Perfect Dielectrics, Brewster Angle, | GCB & CT Chalk &Talk | R1,R6 | 329-333,330-332 |
| 37 | LECTURE 39 | Critical Angle and Total Internal Reflection, | GCB & CT Chalk &Talk | R1 | 334 |
| 38 | LECTURE 40 | Surface Impedance. Poynting Vector and Poynting Theorem | GCB & CT | R1 | 337 |
| 39 | LECTURE 41 | Applications, Power Loss in a Plane Conductor | Seminar by students | R1 | 341 |
| 40 | LECTURE 42 | Illustrative Problems | GCB & CT Chalk &Talk | R4 | 24,42,42,236 |
| 41 | **UNIT-IV Transmission Lines – I** | | | | |
| 42 | LECTURE 43 | Types, Parameters,.. | GCB & CT | R1,T2 | 415,205-207 |
| 43 | LECTURE 44 | T&π Equivalent Circuits, Transmission Line Equations, | GCB & CT | R1 | 421 |
| | LECTURE 45 | Primary & Secondary Constants, | GCB & CT | R1 | 4,18,425 |
| 45 | LECTURE 46 | Expressions for Characteristic Impedance | GCB & CT | R1 | 433 |
| 46 | LECTURE 47 | Propagation Constant, Phase and Group | GCB & CT | R1 | 429 |
| 47 | LECTURE 48 | distortion less lines, | GCB & CT | R1 | 427 |
| 48 | LECTURE 49 | Loading - Types of Loading | PPT | R1 | 430 |
| 49 | LECTURE 50 | expression for impedance | | | |
| 50 | LECTURE 51 | Illustrative Problems. | GCB & CT | R4 | 320-327,332-333 |
| 51 | LECTURE 52 | illustrated problems | GCB & CT | E2,R4 | 2.37-2.41,61 |
| 52 | **UNIT-V Transmission Lines – II** | | | | |
| 53 | LECTURE 53 | SC and OC Lines, | GCB & CT | R1 | |
| 54 | LECTURE 54 | Reflection Coefficient, VSWR | GCB & CT | R1 | 434 |
| 55 | LECTURE 55 | Low loss radio frequency lines and UHF Transmission lines, | GCB & CT | R1 | 437 |

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|---|---|---|---|---|---|
| | LECTURE 56 | UHF Lines as Circuit Elements | GCB & CT | R1 | 437 |
| | LECTURE 57 | Impedance Transformations λ/4, λ /2, λ/8 Lines | GCB & CT | R1 | 4,23,435 |
| | LECTURE 58 | Smith Chart – Construction and Applications | Video class | R1 | 450 |
| 9 | LECTURE 59 | Quarter wave transformer | GCB & CT Chalk &Talk | R1,R6 | 460-462 |
| 0 | LECTURE 60 | Stub Matching-single & double | GCB & CT Chalk &Talk | R1 | 453 |
| 61 | LECTURE 61 | Quarter wave transformer | | | |
| 62 | LECTURE 62 | Illustrative Problems | GCB & CT Chalk &Talk | R6 | 465 |
| 63 | LECTURE 63 | Illustrative Problems | GCB & CT | R6 | 466 |
| 64 | | | | | |
| 65 | | **TOTAL CLASSES** | **63** | | |

**TEXTBOOKS :**

1 Elements of Electromagnetic – Matthew N.O. Sadiku, Oxford Univ. Press, 3rd ed., 2001. 2nd Edition,

2 Electromagnetic Waves and Radiating Systems – E.C. Jordan and K.G. Balmain, PHI,

**REFERENCES :**


1. Electromagnetic Fields and Wave Theory –GSN Raju, Pearson Education 2006
2. Engineering Electromagnetics:Nathan Ida, Springer(India)Pvt.Ltd., New Delhi, 2nd ed., 2005.
3. Engineering Electromagnetics – William H. Hayt Jr. and John A. Buck, TMH, 7th ed., 2006. Rao,Wiley India 2013 Prakashan (Tech. India Publications), New Delhi, 2001.
4. Electromagnetic Field Theory and Transmission Lines: G SasiBhushana
5. Transmission Lines and Networks–Umesh Sinha,Satya
6. Electromagnetic waves and transmission lines – R S Rao, PHI, EEE edition


**EXTRA TEXT BOOKS :**

ET1. ELECTRO MAGNETIC FIELDS Dr.S.KAMAKSHAIAH ET2. ELECTRO MAGNETIC FIELDS Y.MALIKARJUN REDDY

**WEB REFERENCES FOR PPTs**

W1. http://alphard.ethz.ch/Hafner/Vorles/PhysicalMod/chapter1.pdf
W2. http://www.iitg.ernet.in/engfac/krs/public_html/lectures/ee340/2014/3_slides.pdf

**WEB REFERENCES FOR PPTs**

W1. http://nptel.ac.in/
W2. www.dce.kar.nic.in
W3.https://ceit.aut.ac.in

**Signature of faculty**

**Signature of HOD**