


| | | | |
|----------------------------------------------|-------------------------|-------------------|-------------------------------------------------------------------------------------|
| CMR Institute of Technology, Bangalore | | |  |
| Department: Telecommunication Engineering | | | |
| Semester: 06 | Sections: TCE-B & ECE-D | | |
| Subject: Digital Communication | 10EC/TE61 | Lectures/week: 06 | |
| Course Instructor: Mr. Raveesh Hegde | | | |
| Course duration: 13 Feb. 2017 – 02 June 2017 | | | |

Lesson Plan

| Lecture # | Book & Sections | Topics | Portions coverage % | |
|-----------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|
| | | | Individual | Cumulative |
| 1-10 | RB4: Chapter 5-sections 5.1,5.2,5.3 | Probability and Random Process: Introduction and Definitions, Conditional Probability and Statistical Independence, PDF and CDF, Some Important PDFs, Joint and Conditional Density Functions, Random Processes, Wide Sense and Strict Sense Stationarity, Autocorrelation and Power Spectral Density. | - | - |
| 11-14 | TB: Chapter 1-Introduction, Chapter 3-sections 3.1,3.2,3.3 | Introduction to Digital Communication: Advantages of Digital Communication, Block Diagram of Digital Communication Systems, Gram-Schmidt Orthogonalization Procedure, Constellation diagram for ASK, PSK, FSK, Geometric Interpretation of Signals. | 10 | 10 |
| 15-24 | TB: Chapter 4-section 4.1, 4.2, 4.5, 4.7 | Basic Signal Processing Operations in Digital Communication: Sampling Principles, Sampling Theorem, Quadrature Sampling of Bandpass Signals, Practical Aspects of Sampling and Signal Recovery, TDM. | 15 | 25 |
| 25-34 | TB: Chapter 4-section 4.6, Chapter 5-section 5.1,5.3,5.4, 5.5, 5.6, 5.8. | Waveform Coding Techniques: PAM, PCM, Quantization Noise and SNR, Robust Quantization, DPCM, DM, Applications. | 10 | 35 |
| 35-44 | TB: Chapter 6-section 6.1 to 6.8 | Baseband Shaping for Data Transmission: Discrete PAM Signals, Power Spectra of Discrete PAM Signals, ISI, Nyquist's Criterion for Distortion less Baseband Binary Transmission, Correlative Coding, Eye pattern, Baseband M-ary PAM Signals, Adaptive Equalization for Data Transmission. | 17 | 52 |
| 45-53 | TB: Chapter 3-section 3.4 to 3.9 | Detection of Known Signals in Noise: Correlation Receiver, Response of Bank of Correlators to Noisy Input, Matched Filter Receiver, Detection of Signals With Unknown Phase in Noise. | 16 | 68 |

| | | | | |
|-------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|
| 54-63 | TB: Chapter 7- section 7.1 to 7.4 | Digital Modulation Techniques: Digital Modulation Formats, Coherent Binary Modulation Techniques, Coherent Quadrature Modulation Techniques, Non Coherent Binary Modulation Techniques. | 18 | 86 |
| 64-68 | TB: Chapter 9- section 9.1,9.2, 9.3, 9.6, 9.7 | Spread Spectrum Modulation: Pseudo Noise Sequences, Notion of Spread Spectrum, Direct Sequence Spread Spectrum, Coherent Binary PSK, Frequency Hop Spread Spectrum, Applications. | 14 | 100 |

Syllabus for Internal Assessment Tests (IAT)*

| IAT # | Syllabus |
|-------|-----------------|
| IAT-1 | Class # 01 – 24 |
| IAT-2 | Class # 25 – 44 |
| IAT-3 | Class # 45 – 68 |

* See calendar of events for the schedules of IATs.

Literature:

| Book Type | Code | Author & Title | Publication info |
|-----------|------|----------------------------------------------------------------------------------|-----------------------------|
| Text Book | TB | Digital Communication by Simon Haykin. | John Wiley India Lts, 2008. |
| Reference | RB1 | Digital and Analog Communication Systems by Simon Haykin. | John Wiley India Lts, 2008. |
| Reference | RB2 | An Introduction to Analog and Digital Communication by K.Sam Shanmugam. | John Wiley India Lts, 2008. |
| Reference | RB3 | Digital Communications by Bernard Sklar | Pearson Education 2007 |
| Reference | RB4 | Fundamentals of Communication Systems by John G Proakis and Masoud Salehi | Pearson Education 2007 |

Department of Electronics and Communication

| | | | |
|----------------|----------------|------------------------|----------------------------|
| SEMESTER : | VI | NAME OF THE FACULTY : | SUNIL KUMAR K H, SUMA S |
| BRANCH : | ECE/TCE | DATE OF COMMENCEMENT : | 13/02/2017 |
| SUBJECT : | MICROPROCESSOR | DATE OF CLOSING : | 02/06/2017 |
| SUBJECT CODE : | 10EC62 | CLASS STRENGTH : | 60 |
| NO OF HRS/WK : | 5 | TOTAL HRS : | 52 |

| Sessi on No | Chapter no (No of hrs planed for the chapter) | DATE | Topics planned for the session | Teaching Aids | Assign ments/ Tests planned for the chapter | Topics covere d As per plan |
|-------------|---------------------------------------------------|------------|---------------------------------------------------|----------------------|---------------------------------------------|-----------------------------|
| 1 | UNIT-1: 8086 PROCESSOR S (8 Hours) | 13/02/2017 | Introduction | Board, chalk, duster | | |
| 2 | | 13/02/2017 | A Historical Background | „ | | |
| 3 | | 15/02/2017 | The Microprocessor Based Personal Computer System | „ | | |
| 4 | | 16/02/2017 | Architecture of 8086 | „ | | |
| 5 | | 18/02/2017 | Machine Language Instruction | „ | | |
| 6 | | 20/02/2017 | Instruction Execution time | „ | | |
| 7 | | 22/02/2017 | Exercise | „ | Assignm ent 1 | |
| 8 | | 23/02/2017 | Revision | „ | | |
| 9 | UNIT-2: INSTRUCTIO N SET OF 8086 (8 Hours) | 23/02/2017 | Assembler Instruction Format | „ | | |
| 10 | | 28/02/2017 | Data Transfer and Arithmetic Instr., | Board, chalk, duster | | |
| 11 | | /03/2017 | Branch, Loop Instr., | „ | | |
| 12 | | 01/03/2017 | NOP & HALT, Flag Manipulation | „ | | |

| | | | | | | |
|----|-------------------------------------------------------|------------|----------------------------------------------------|----------------------|--------------|--|
| 13 | | 01/03/2017 | Logical and Shift and Rotate instr., | ” | Assignment 2 | |
| 14 | | 06/03/2017 | Illustration of these instr., | ” | | |
| 15 | | 07/03/2017 | Directives and Operators | ” | | |
| 16 | | 09/03/2017 | Revision | ” | | |
| 17 | UNIT-3: BYTE AND STRING MANIPULATION (9 Hours) | 10/03/2017 | String Instr., | ” | | |
| 18 | | 13/03/2017 | REP Prefix | ” | | |
| 19 | | 14/03/2017 | Table Translation | Board, chalk, duster | | |
| 20 | | 16/03/2017 | Number Format Conversions | ” | | |
| 21 | | 16/03/2017 | Procedures | ” | | |
| 22 | | 17/03/2017 | Macros | ” | Assignment 3 | |
| 23 | | 20/03/2017 | Programming using Keyboard and Video display | ” | | |
| 24 | | 21/03/2017 | Programming using Keyboard and Video display(cont) | ” | | |
| 25 | | 23/03/2017 | Revision | ” | | |
| 26 | UNIT-4: 8086 INTERRUPTS (5 Hours) | 24/03/2017 | 8086 Interrupts | ” | | |
| 27 | | 24/03/2017 | Interrupts responses | ” | | |
| 28 | | 01/04/2017 | Hardware interrupt applications | Board, chalk, duster | | |
| 29 | | 03/04/2017 | Software interrupt applications | ” | Assignment 4 | |
| 30 | | 05/04/2017 | Interrupt examples | ” | | |
| 31 | UNIT-5: 8086 INTERFACING (9 Hours) | 06/04/2017 | Interfacing microprocessor to keyboard | ” | | |
| 32 | | 06/04/2017 | Interfacing microprocessor to keyboard(cont) | ” | Assignment 5 | |
| 33 | | 08/04/2017 | Interfacing microprocessor to keyboard(cont) | ” | | |
| 34 | | 10/04/2017 | Interfacing microprocessor to keyboard(cont) | ” | | |
| 35 | | 12/04/2017 | Interfacing microprocessor to keyboard(cont) | ” | | |

| | | | | | | |
|----|--------------------------------------------------------------|------------|---------------------------------------------------|----------------------|--------------|--|
| 36 | | 13/04/2017 | Interfacing to alphanumeric displays | „ | | |
| 37 | | 13/04/2017 | Interfacing to alphanumeric displays(cont) | Board, chalk, duster | | |
| 38 | | 18/04/2017 | Interfacing a microcomputer to a stepper motor | „ | Assignment 6 | |
| 39 | | 19/04/2017 | Revision | „ | | |
| 40 | UNIT-6: 8086 BASED MULTIPROCESSING SYSTEMS (8 Hours) | 21/04/2017 | Coprocessor configurations | „ | | |
| 41 | | 22/04/2017 | Coprocessor configurations(cont) | „ | | |
| 42 | | 22/04/2017 | The 8087 numeric data processor: data types | „ | | |
| 43 | | 25/04/2017 | The 8087 numeric data processor: data types(cont) | „ | | |
| 44 | | 26/04/2017 | Processor architecture | „ | Assignment 7 | |
| 45 | | 28/04/2017 | Processor architecture(cont) | „ | | |
| 46 | | 02/05/2017 | Instruction set and examples | Board, chalk, duster | | |
| 47 | | 02/05/2017 | Revision | „ | | |
| 48 | UNIT-7: SYSTEM BUS STRUCTURE (6 Hours) | 04/05/2017 | Basic 8086 configuration: | „ | | |
| 49 | | 05/05/2017 | Minimum mode | „ | | |
| 50 | | 12/05/2017 | Maximum mode | „ | | |
| 51 | | 13/05/2017 | Bus interface: PCI | „ | | |
| 52 | | 13/05/2017 | The parallel printer interface (LPT) | „ | | |
| 53 | | 16/05/2017 | The universal serial bus (USB) | „ | Assignment 8 | |
| 54 | UNIT-8: 80386, 80486 AND PENTIUM PROCESSORS (6 Hours) | 17/05/2017 | Introduction to the 80386 microprocessor | „ | | |
| 55 | | 19/05/2017 | Special 80386 registers | Board, chalk, duster | | |
| 56 | | 20/05/2017 | Introduction to the 80486 microprocessor | „ | Assignment 9 | |
| 57 | | 20/05/2017 | Introduction to the Pentium microprocessor | „ | | |

| | | | | | | |
|----|--|------------|-------------------------|---|--|--|
| 58 | | 23/05/2017 | Question paper solution | „ | | |
| 59 | | 24/05/2017 | Question paper solution | „ | | |

Signature of faculty

Signature of HOD

Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

**CMR INSTITUTE
OF TECHNOLOGY**



Session wise – Course Plan

Department of Telecommunication Engineering

SEMESTER : VI
BRANCH : TCE
SUBJECT : Antennas & Propagation
SUBJECT CODE : 10TE63
NO OF HRS/WK : 5

NAME OF THE FACULTY : Mr. Abhishek Javali
DATE OF COMMENCEMENT : 13.02.2017
DATE OF CLOSING : 02.06.2017
CLASS STRENGTH : 60
TOTAL HRS : 52

| Session No | Chapter no (No of hrs planed for the chapter) | DATE | Topics planned for the session | Teaching Aids | Assignments/ Tests planned for the chapter | Topics covered As per plan |
|------------|-----------------------------------------------------|------------|-------------------------------------------------------------------|----------------------|--------------------------------------------------|----------------------------------|
| 1 | 1/1 | 13.02.2017 | Unit-1 Introduction to antennas , basic antenna parameters | Board, chalk, duster | Assignment-1 | |
| 2 | 2/1 | 14.02.2017 | Patterns, beam area, and radiation intensity | „ | | |
| 3 | 3/1 | 15.02.2017 | Beam efficiency, directivity and gain | „ | | |
| 4 | 4/1 | 16.02.2017 | Antenna aperture, Effective height | „ | | |
| 5 | 5/1 | 17.02.2017 | Bandwidth, Radiation, antenna temperature, efficiency | „ | | |
| 6 | 6/1 | 20.02.2017 | Antenna field zones, Problems for effective height, | „ | | |

| | | | | | | |
|----|---------------|------------|----------------------------------------------------------------------------------------------|----------------------|--------------|--|
| 7 | 7/1 | 21.02.2017 | FRISS formula | „ | | |
| 8 | $\frac{1}{2}$ | 22.02.2017 | Unit-2 POINT SOURCES AND ARRAYS: Introduction, point sources | Board, chalk, duster | Assignment-2 | |
| 9 | 2/2 | 27.02.2017 | power patterns, power theorem | „ | | |
| 10 | 3/2 | 28.02.2017 | radiation intensity, filed patterns | „ | | |
| 11 | 4/2 | 01.03.2017 | phase patterns. Array of two isotropic point sources | „ | | |
| 12 | 5/2 | 02.03.2017 | Array of two isotropic point sources | „ | | |
| 13 | 6/2 | 06.03.2017 | endfire array and broadfire array | „ | | |
| 14 | 1/3 | 07.03.2017 | UNIT - 3 ELECTRIC DIPOLES AND THIN LINEAR ANTENNAS Introduction | „ | Assignment-3 | |
| 15 | 2/3 | 08.03.2017 | short electric dipole, fields of a short dipole (no derivation of field components included) | | | |
| 16 | 3/3 | 09.03.2017 | radiation resistance of short dipole | | | |
| 17 | 4/3 | 10.03.2017 | radiation resistances of $\lambda/2$ Antenna, thin linear antenna | | | |
| 18 | 5/3 | 11.03.2017 | micro strip arrays, low side lobe arrays | „ | | |
| 19 | 6/3 | 02.03.2017 | long wire antenna, folded dipole antennas | „ | | |
| 20 | $\frac{1}{4}$ | 13.03.2017 | UNIT - 4 & 5 LOOP, SLOT, PATCH AND HORN ANTENNA: Introduction | „ | Assignment-4 | |
| 21 | 2/4 | 14.03.2017 | small loop, comparison of far fields of small loop and short dipole | „ | | |
| 22 | $\frac{3}{4}$ | 15.03.2017 | loop antenna general case, far field patterns of circular loop | „ | | |
| 23 | 4/4 | 16.03.2017 | radiation resistance, directivity, slot antenna | | | |

| | | | | | | |
|----|------|------------|-----------------------------------------------------------------|----------------------|--------------|--|
| 24 | 5/4 | 17.03.2017 | Babinet's principle and complementary antennas | Board, chalk, duster | | |
| 25 | 6/4 | 18.03.2017 | impedance of complementary and slot antennas, patch antennas | „ | | |
| 26 | 7/4 | 20.03.2017 | horn antennas, rectangular horn antennas | „ | | |
| 27 | 1/6 | 21.03.2017 | UNIT - 6 ANTENNA TYPES: Helical Antenna | „ | Assignment-5 | |
| 28 | 2/6 | 22.03.2017 | Yagi-Uda array | „ | | |
| 29 | 3/6 | 23.03.2017 | corner reflectors | „ | | |
| 30 | 4/6 | 24.03.2017 | parabolic reflectors, log periodic antenna | „ | | |
| 31 | 5/6 | 31.03.2017 | lens antenna, antenna for special applications – sleeve antenna | „ | | |
| 32 | 6/6 | 01.04.2017 | turnstile antenna, omni directional antennas | „ | | |
| 33 | 7/6 | 04.04.2017 | antennas for satellite antennas for ground penetrating radars | Board, chalk, duster | | |
| 34 | 8/6 | 05.04.2017 | embedded antennas, ultra-wide band antennas | „ | | |
| 35 | 9/6 | 06.04.2017 | plasma antenna | „ | | |
| 36 | 10/6 | 07.04.2017 | high resolution data | „ | | |
| 37 | 11/6 | 08.04.2017 | intelligent antennas | „ | | |
| 38 | 12/6 | 10.04.2017 | antennas for remote sensing | „ | | |
| 39 | 1/8 | 11.04.2017 | UNIT - 7 & 8 RADIO WAVE PROPAGATION | „ | Assignment-6 | |
| 40 | 2/8 | 12.04.2017 | Introduction, Ground wave propagation | „ | | |
| 41 | 3/8 | 13.04.2017 | Ground wave propagation | „ | | |

| | | | | | | |
|----|-------------|------------|-------------------------------------------------------------|----------------------------|--------------|--|
| 42 | 4/8 | 17.04.2017 | free space propagation | „ | | |
| 43 | 5/8 | 22.04.2017 | ground reflection, surface wave | „ | | |
| 44 | 6/8 | 26.04.2017 | diffraction | „ | | |
| 45 | 7/8 | 02.05.2017 | TROPOSPHERE WAVE PROPAGATION: Troposcopic scatter | „ | Assignment-7 | |
| 46 | 8/8 | 05.05.2016 | Ionosphere propagation | „ | | |
| 47 | 9/8 | 11.05.2016 | electrical properties of the ionosphere | „ | | |
| 48 | 10/8 | 16.05.2016 | effects of earth's magnetic field | „ | | |
| 49 | | 18.05.2016 | Revision | Board, chalk, duster | Assignment-8 | |
| 50 | | 19.05.2016 | Revision | „ | | |
| 51 | | 22.05.2016 | Discussion on VTU question papers | „ | | |
| 52 | | 23.05.2016 | Discussion on VTU question papers | „ | | |

Signature of faculty

Signature of HOD

Signature of Principal

CMR INSTITUTE OF TECHNOLOGY
Session wise – Course Plan
DEPARTMENT OF ELECTRONICS AND COMMUNICATION
ENGINEERING

| | | | |
|---------------------|---------------------------------------------|------------------------|-------------------------|
| Semester : | <u>B. E 6 sem</u> | NAME OF THE FACULTY : | <u>Dr Ananda Babu</u> |
| Branch: | <u>Telecommunication Engineering</u> | DATE OF COMMENCEMENT : | <u>13 – 02- 2017</u> |
| Subject | <u>10 EC /TE 64</u> | DATE OF CLOSING : | <u>25 -05-2017</u> |
| No. of Hours/Week : | <u>5</u> TOTAL (Teaching)HOURS : <u>54</u> | CLASS STRENGTH : | <u>A and B Sections</u> |

Text Book Referred: **A: Microwave Devises and Circuits by LIAO, Pearson Education**
B. Microwave Engineering, Annapurna Das TMH Publication
C. Introduction to Radar Systems, MI Skolnik, 3 edition, TMH

| Session No. | Chapter Number (No. Hrs Planned for the chapter) | Topics Planned for the Session | Date | Teaching Aids Used | Assignment / Tests Planned for the chapter | Topics covered as per Plan? | Remarks |
|-------------|--------------------------------------------------|-------------------------------------------------|------|--------------------|--------------------------------------------|-----------------------------|---------|
| 1 | Unit -1 A:Ch 3 | Microwave Transmission Lines | | Board /Projector | | | |
| 2 | | Transmission line equations and Solutions | | “ | | | |
| 3 | | Reflection and transmission coefficients, SWR | | “ | | | |
| 4 | | Impedance matching , smith Chart | | “ | | | |
| 5 | | Solving Problems | | “ | | | |
| 6 | Unit -2 A Ch 4 | Microwave Wave Guides and Components | | “ | Assignment 1 | | |
| 7 | | Rectangular wave guides | | “ | | | |
| 8 | | Circular wave guides | | “ | | | |
| 9 | | Cavities | | “ | | | |
| 10 | | Hybrid circuits | | “ | | | |
| | | | | “ | | | |
| | | | | “ | | | |
| 11 | Unit -2, A:Ch4 | Directional Couplers, circulators and Isolators | | “ | | | |
| 12 | | Solving problems | | “ | Assignment 2 | | |
| 13 | | | | “ | I Internal | | |
| 14 | Unit 3 A :Ch7 | ContdTransferred electron devices | | “ | | | |
| 15 | | Gunn effect Diodes | | “ | | | |

| Session No. | Chapter Number (No. Hrs Planned for the chapter) | Topics Planned for the Session | Date | Teaching Aids Used | Assignment / Tests Planned for the chapter | Topics covered as per Plan? | Remarks |
|-------------|--------------------------------------------------|---------------------------------------------------|------|--------------------|--------------------------------------------|-----------------------------|---------|
| 16 | A Ch8 | Impatt diode | | “ | | | |
| 17 | | contd | | “ | | | |
| 18 | | Baritt diodes | | “ | | | |
| 19 | | contd | | “ | | | |
| 20 | | Solving Problems | | “ | | | |
| 21 | Unit 4, B Ch 6 | MW Network Theory and Passive devices | | “ | | | |
| 22 | | Two port networks, Z, Y and S parameters/Matrices | | “ | | | |
| 23 | | Contd | | “ | | | |
| 24 | | Contd | | “ | Assignment 3 | | |
| 25 | | | | “ | | | |
| 26 | | | | “ | | | |
| 27 | Unit 5 | Microwave Passive Devices | | “ | | | |
| 28 | | Adapters, Phase Shifters | | “ | | | |
| 29 | | Wave guide Tees. Magic Tees | | “ | | | |
| 30 | | contd | | “ | | | |
| 31 | | contd | | “ | | | |
| 32 | Unit -6 A 11 | Strip Lines | | “ | | | |
| 33 | | Parallel strip lines | | “ | | | |
| 34 | | Coplanar striplines | | “ | | | |
| 35 | | Shielded striplines | | “ | | | |
| 36 | | Contd | | “ | | | |
| 37 | | contd | | “ | Assignment 4 | | |
| | | | | “ | II Internal | | |
| 38 | Unit 7: C ch1 | RADAR | | “ | | | |
| 39 | | Radar Equation | | “ | | | |
| 40 | | Block Diagram | | “ | | | |
| 41 | | Frequencies and Applications | | “ | | | |
| | | | | “ | | | |
| 42 | | Solving Problems | | “ | | | |
| 43 | | Solving problems | | “ | | | |

| Session No. | Chapter Number (No. Hrs Planned for the chapter) | Topics Planned for the Session | Date | Teaching Aids Used | Assignment / Tests Planned for the chapter | Topics covered as per Plan? | Remarks |
|-------------|--------------------------------------------------|--------------------------------|------|--------------------|--------------------------------------------|-----------------------------|---------|
| 44 | Unit-8, Ch3 | MTI and Pulse Doppler Radar | | “ | | | |
| 45 | | Digital MTI processor | | “ | | | |
| 46 | | MTD | | “ | | | |
| 47 | | Pulse Doppler radar | | “ | Assignment 5 | | |
| 48 | | Contd | | “ | | | |
| 49 | | Solving problems | | “ | | | |
| 50 | | contd | | | | | |
| | | END | | | III Internal | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | “ | | | |
| | | | | “ | | | |
| | | | | | | | |
| | | | | | | | |

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

**CMR INSTITUTE
OF TECHNOLOGY**



Lesson Plan

Department of Electronics & Communication Engineering

SEMESTER : VI
BRANCH : TCE
SUBJECT : ITC
SUBJECT CODE : 10TE65
NO OF HRS/WK : 5

NAME OF THE FACULTY : Mrs. Shruthi M. L. J.
DATE OF COMMENCEMENT : 13.02.2017
DATE OF CLOSING : 02.06.2017
CLASS STRENGTH : 47+44+14
TOTAL HRS : 62

| No | Chapter no (No of hrs planned) | Date | Topics planned for the session | Teaching Aids | Assignments/Tests planned for the chapter | Topics covered As per plan |
|----|--------------------------------|------|--------------------------------|---------------|-------------------------------------------|----------------------------|
|----|--------------------------------|------|--------------------------------|---------------|-------------------------------------------|----------------------------|

| | | | | | | |
|----|------------------|-------|----------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|--|
| | for the chapter) | | | | | |
| 1 | - | 13-02 | Model of communication system, Introduction to Probabilities, Joint probabilities, | Board, chalk, duster | | |
| 2 | - | 14-02 | Probability distribution function, Random variables, Discrete random variables, | “_” | | |
| 3 | - | 15-02 | Continuous random variables, Random process, Noise in communication system Perquisite | “_” | | |
| 4 | 1/1 | 16-02 | Information theory: Introduction, Measure of information, Average information content of symbols in long independent sequences. | “_” | | |
| 5 | 2/1 | 17-02 | Problems on information content, Calculation of entropy. | “_” | | |
| 6 | 3/1 | 18-02 | Information rate, average information rate. Numerical calculations. | “_” | | |
| 7 | 4/1 | 21-02 | Average information content of symbols in long dependent sequences. | “_” | | |
| 8 | 5/1 | 22-02 | Problems. | “_” | | |
| 9 | 6/1 | 23-02 | Markoff statistical model for information source. | “_” | | |
| 10 | 7/1 | 27-02 | Entropy and Information rate of markoff source. | “_” | | |
| 11 | 8/1 | 28-02 | Problems on markoff sources. Key points. | “_” | Assignment 1 | |
| 12 | 1/2 | 01-03 | Source Coding: Introduction Encoding of the source output, Shannon’s first theorem(Noiseless coding theorem) | “_” | | |
| 13 | 2/2 | 02-03 | Shannon’s encoding algorithm, Numericals. | “_” | | |
| 14 | 3/2 | 06-03 | Shannon Fano encoding algorithm. | “_” | | |
| 15 | 4/2 | 07-03 | Numericals | “_” | | |
| 16 | 5/2 | 08-03 | Communication Channels, | “_” | | |
| 17 | 6/2 | 09-03 | Discrete communication channels, | “_” | | |
| 18 | 7/2 | 10-03 | Numericals | “_” | | |

| | | | | | | |
|----|------|-------|----------------------------------------------------------------------------|-----|--------------|--|
| 19 | 8/2 | 11-03 | Continuous channels. | “_” | | |
| 20 | 9/2 | 13-03 | Numericals | “_” | Assignment 2 | |
| 21 | 1/3 | 14-03 | Fundamental Limits on Performance: Source coding theorem, | “_” | | |
| 22 | 2/3 | 14-03 | Huffman coding. | “_” | | |
| 23 | 3/3 | 15-03 | Discrete memory less Channels, | “_” | | |
| 24 | 4/3 | 16-03 | Numericals | “_” | | |
| 25 | 5/3 | 17-03 | Mutual information, | “_” | | |
| 26 | 6/3 | 18-03 | Channel Capacity. | “_” | | |
| 27 | 7/3 | 20-03 | Channel Capacity contd. | “_” | Assignment 3 | |
| 28 | 1/4 | 21-03 | Continuous channels: Channel Coding Theorem. | “_” | | |
| 29 | 2/4 | 22-03 | Differential entropy. | “_” | | |
| 30 | 3/4 | 23-03 | Mutual information for continuous ensembles. | “_” | | |
| 31 | 4/4 | 24-03 | Numericals | “_” | | |
| 32 | 5/4 | 31-03 | Channel capacity theorem | “_” | | |
| 33 | 6/4 | 01-04 | Numericals | “_” | | |
| 34 | 7/4 | 03-04 | Numericals | “_” | | |
| 35 | 8/4 | 04-04 | Numericals | “_” | Assignment 4 | |
| 36 | 1/5 | 05-04 | Introduction to Error Control Coding: Types of errors, examples. | “_” | | |
| 37 | 2/5 | 06-04 | Types of Linear Block Codes | “_” | | |
| 38 | 3/5 | 07-04 | Matrix description, | “_” | | |
| 39 | 4/5 | 08-04 | Numericals | “_” | | |
| 40 | 5/5 | 13-04 | Numericals | “_” | | |
| 41 | 6/5 | 15-04 | Error detection and correction, | “_” | | |
| 42 | 7/5 | 17-04 | Numericals | “_” | | |
| 43 | 8/5 | 19-04 | Numericals | “_” | | |
| 44 | 9/5 | 20-04 | Standard arrays and table look up for decoding. | “_” | | |
| 45 | 10/5 | 21-04 | Numericals | “_” | | |
| 46 | 11/5 | 22-04 | Numericals | “_” | Assignment 5 | |
| 47 | 1/6 | 24-04 | Binary Cyclic Codes: Introduction to bcc | “_” | | |
| 48 | 2/6 | 25-04 | Algebraic structures of cyclic codes, | “_” | | |
| 49 | 3/6 | 26-04 | Encoding using an (n-k) bit shift register, | “_” | | |
| 50 | 4/6 | 27-04 | Numericals | “_” | | |
| 51 | 5/6 | 28-04 | Syndrome calculation, BCH codes. | “_” | | |
| 52 | 6/6 | 02-05 | Numericals | “_” | Assignment 6 | |
| 53 | 1/7 | 03-05 | Other Error Control Codes: RS Codes. | “_” | | |

| | | | | | | |
|----|-----|-------|-----------------------------------------------------------------|-----|--------------|--|
| 54 | 2/7 | 11-05 | Golay codes. | “_” | | |
| 55 | 3/7 | 12-05 | Shortened cyclic codes, | “_” | | |
| 56 | 4/7 | 13-05 | Burst error correcting codes, | “_” | | |
| 57 | 5/7 | 15-05 | Burst and Random Error correcting codes. | “_” | | |
| 58 | 1/8 | 16-05 | Convolution Codes: Introduction, Time domain approach | “_” | Assignment 7 | |
| 59 | 2/8 | 19-05 | Transform domain approach | “_” | | |
| 60 | 3/8 | 20-05 | State table, state transition table. | “_” | | |
| 61 | 4/8 | 22-05 | State diagram. Code tree | “_” | Assignment 8 | |
| 62 | 5/8 | 23-05 | Revision | “_” | | |

Signature of faculty

Signature of HOD

Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

**CMR INSTITUTE
OF TECHNOLOGY**



Session wise – Course Plan

Department of Computer Science and Engineering

SEMESTER : VI
BRANCH : EC/TC
SUBJECT : PROGRAMMING IN C++
SUBJECT CODE: 10EC665/10TC661
NO OF HRS/WK : 5

NAME OF THE FACULTY : POONAM TIJARE
DATE OF COMMENCEMENT: 13 FEB 2017
DATE OF CLOSING :24 MAY 2017
CLASS STRENGTH :
TOTAL HRS : 58

| Sessi on No | Chapter no (No of hrs planed for the chapter) | DATE | Topics planned for the session | Teaching Aids | Assignm ents/ Tests planned for the chapter | Topics covered As per plan |
|-------------------|--------------------------------------------------------|------|--------------------------------|------------------|------------------------------------------------------------|-------------------------------------|
|-------------------|--------------------------------------------------------|------|--------------------------------|------------------|------------------------------------------------------------|-------------------------------------|

| | | | | | | |
|----|------------|------------|------------------------------------------------------------------------------|-----------------|---------------------|--|
| 1 | 1/3 | 13/02/2017 | Discussing Prerequisites Review of Functions Simple C and C++ Programs | Chalk & Talk | | |
| 2 | 2/3 | 14/02/2017 | Simple C and C++ Programs cont.. | ” | | |
| 3 | 3/3 | 15/02/2017 | Simple C and C++ Programs cont.. | | | |
| 4 | 1/8 | 18/02/2017 | C++, AN OVERVIEW: Getting started, the C++ program, | ” | Assignm ent- I | |
| 5 | 2/8 | 20/02/2017 | Pre-processor Directive | ” | | |
| 6 | 3/8 | 21/02/2017 | The Built-In Array Data Type | ” | | |
| 7 | 4/8 | 21/02/2017 | Dynamic Memory Allocation and Pointers | ” | | |
| 8 | 5/8 | 22/02/2017 | Dynamic Memory Allocation and Pointers | ” | | |
| 9 | 6/8 | 28/02/2017 | An Object – based Design, An Object-Oriented Design | ” | | |
| 10 | 7/8 | 1/03/2017 | An Exception – based Design, An array | ” | | |
| 11 | 8/8 | 2/03/2017 | THE BASIC LANGUAGE Literal Constant, Variables, | ” | Assignm ent -II | |
| 12 | 1/8 | 2/03/2017 | Pointer Type, String Types | ” | | |
| 13 | 2/8 | 3/03/2017 | const Qualifier, Reference Types | ” | | |
| 14 | 3/8 | 9/03/2017 | the bool type, Enumeration types | ” | | |
| 15 | 4/8 | 10/03/2017 | Array types | ” | | |
| 16 | 5/8 | 11/03/2017 | Programs on arrays | ” | | |
| 17 | 6/8 | 11/03/2017 | The vector container type. | ” | | |
| 18 | 7/8 | 13/03/2017 | Programs on unit 2, review of unit2 | ” | | |
| 19 | 1/7 | 16/03/2017 | OPERATORS: Arithmetic Operators, Equality | ” | | |
| 20 | 2/7 | 17/03/2017 | Relational and Logical operators, Assignment operators | ” | Assignm ent –III | |
| 21 | 3/7 | 18/03/2017 | Increment and Decrement operator, The conditional Operator, | ” | | |
| 22 | 4/7 | 18/03/2017 | Bitwise operator, bitset operations. | ” | | |
| 23 | 5/7 | 20/03/2017 | Statements: if, switch | ” | | |
| 24 | 6/7 | 23/03/2017 | for Loop, while, | ” | | |

| | | | | | | |
|----|------------|------------|---------------------------------------------------------------------------------------|---|--------------------|--|
| 25 | | 24/03/2017 | Revision for 1 st Internal portion | ” | | |
| 26 | 7/7 | 31/03/2017 | break, goto, continue statements. Review of unit 3 | ” | | |
| 27 | 1/6 | 31/03/2017 | FUNCTIONS: Prototype, Argument pass ing | ” | Assignm ent –IV | |
| 28 | 2/6 | 1/04/2017 | Types of functions | ” | | |
| 29 | 3/6 | 5/04/2017 | Programs on Argument pass ing | ” | | |
| 30 | 4/6 | 6/04/2017 | linear function. | ” | | |
| 31 | 5/6 | 7/04/2017 | Programs on linear function. | ” | | |
| 32 | 6/6 | 7/04/2017 | Recursion | ” | | |
| 33 | 1/5 | 8/04/2017 | EXCEPTION HANDLING: Throwing an Exception, Catching an exception, | “ | | |
| 34 | 2/5 | 12/04/2017 | Programs on Throwing an Exception, Catching an exception, | ” | Assignm ent -V | |
| 35 | 3/5 | 13/04/2017 | Exception Specification and Exceptions and Design Issues. | ” | | |
| 36 | 4/5 | 17/04/2017 | Exception Specification and Exceptions and Design Issues. | ” | | |
| 37 | 5/5 | 17/04/2017 | Programs on Exception handling | ” | | |
| 38 | 1/6 | 18/04/2017 | CLASSES: Definition, Class Objects, Class Initialization, , Class Object | ” | | |
| 39 | 2/6 | 21/04/2017 | Programs on classes | ” | | |
| 40 | 3/6 | 22/04/2017 | Class constructor, Examples | “ | | |
| 41 | 4/6 | 24/04/2017 | The class destructor, Examples | ” | | |
| 42 | 5/6 | 24/04/2017 | Arrays of Objects, Examples | ” | Assignm ent -VI | |
| 43 | 6/6 | 25/04/2017 | Vectors of Objects, Examples | ” | | |
| 44 | 1/6 | 28/04/2017 | Overload Operators, | ” | | |
| 45 | 2/6 | 2/5/2017 | Examples on Operator Overloading | ” | | |
| 46 | 3/6 | 3/5/2017 | Operators ++ and -- | ” | | |

| | | | | | | |
|----|------------|-----------|-----------------------------------------------------|---|----------------------|--|
| 47 | 4/6 | 03/5/2017 | Examples on Operators ++ and -- | ” | | |
| 48 | 5/6 | 4/5/2017 | Operators new and delete. | “ | Assignm ent -VII | |
| 49 | 6/6 | 12/5/2017 | Examples on Operators new and delete. | ” | | |
| 50 | 1/6 | 12//2017 | Multiple Inheritances | ” | | |
| 51 | 2/6 | 13/5/2017 | Examples on Inheritances | ” | | |
| 52 | 3/6 | 15/5/2017 | public, private & protected inheritance, | ” | | |
| 53 | 4/6 | 16/5/2017 | Examples on public, private & protected inheritance | ” | | |
| 54 | 5/6 | 19/5/2017 | Class scope under Inheritance. | ” | Assignm ent -VIII | |
| 55 | 6/6 | 20/5/2017 | Cont...Class scope under Inheritance | ” | | |
| 56 | 3/7 | 22/5/2017 | Revision | “ | | |
| 57 | 4/7 | 22/5/2017 | Revision | ” | | |
| 58 | 5/7 | 23/5/2017 | Revision | ” | | |

Syllabus for Internal Assessment Tests (IAT)*

| IAT # | Syllabus |
|-------------|-----------------|
| IAT-1 | Class # 01 – 26 |
| IAT-2 | Class #27 – 53 |
| IMPROVEMENT | Class # 1 - 60 |

* : See calendar of events for the schedules of IATs.

Literature:

| Book Type | Code | Author & Title | Publication information | |
|-----------|------|----------------------------------------|------------------------------------|-------------------------------------------------------|
| | | | Edition // Publisher | ISBN # |
| Text Book | TB1 | C++ Primer, S. B. Lippman & J. Lajoie, | 3rd Edition, Addison Wesley, 2000. | ISBN-10: 0-321-71411-3; ISBN-13: 978-0-321-71411-4 |

| | | | | |
|------------|-----|------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------|
| References | RB1 | C++ Program Design: An Introduction to Programming and Object- Oriented Design. Cohoon and Davidson, | 3rd Edn. TMH publication. 2004. | ISBN-13: 978-0-07-292196-0, ISBN: 0-07-292196-X. |
| References | RB2 | Object Oriented Programming using C++, R. Lafore, | Galgotia Publications, 2004. | ISBN-10: 0672323087; ISBN-13: 978-0672323089 |

Signature of Faculty

Signature of HOD

Signature of Principal

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037
T:+9180 28524466 / 77

**CMR INSTITUTE
OF TECHNOLOGY**



Session wise – Course Plan

Department of ECE/TCE

SEMESTER : VI
BRANCH : ECE/TCE
SUBJECT : DSDV
SUBJECT CODE: 10EC667
NO OF HRS/WK : 5

NAME OF THE FACULTY : Mr Chetan H
DATE OF COMMENCEMENT: 13.01.2017/
DATE OF CLOSING : 22.5.2015
CLASS STRENGTH : 45 (ECE), 25(TCE)
TOTAL HRS : 61

| Session No | Chapter no (No of hrs planned for the chapter) | DATE | Topics planned for the session | Teaching Aids | Assignments/ Tests planned for the chapter | Topics covered As per plan |
|------------|------------------------------------------------|----------|--------------------------------------------|---------------------------|--------------------------------------------|----------------------------|
| 1 | | 16.02.17 | Digital Systems and Embedded Systems | PPT, Board, chalk, duster | | 13.5% |
| 2 | | 18.02.17 | Binary representation and Circuit Elements | „ | | |

| | | | | | | |
|----|------|-------------|----------------------------------------------------|---------------------------------|------------------|-------|
| 3 | 1/5 | 20.02.17 | Real-World Circuits | „ | | |
| 4 | | 22/21.02.17 | Real-World Circuits(cont.) | „ | | |
| 5 | | 22.02.17 | Models | „ | | |
| 6 | 2/10 | 23.02.17 | Design Methodology | „ | | 27% |
| 7 | | 27.02.17 | Design Methodology(cont.) | „ | Assignment- I | |
| 8 | | 28.02.17 | Boolean Functions | PPT, Board, chalk, duster | | |
| 9 | | 1.03.17 | Boolean Algebra | „ | | |
| 10 | | 2.03.17 | Boolean Algebra(cont.) | „ | | |
| 11 | | 6.03.17 | Binary Coding | „ | | |
| 12 | | 7/8.03.17 | Combinational Components and Circuits | „ | | |
| 13 | | 8.03.17 | Combinational Components and Circuits(cont.) | „ | Assignment -II | |
| 14 | | 9.03.17 | Verification of Combinational Circuits | „ | | |
| 15 | | 10.03.17 | Example Programs | | | |
| 16 | 3/6 | 11.03.17 | Unsigned Integers | | | 38.5% |
| 17 | | 13.03.17 | Unsigned Integers(cont.) | | | |
| 18 | | 14.03.17 | Signed Integers | „ | | |
| 19 | | 15.03.17 | Signed Integers(cont.) | „ | Assignment – III | |
| 20 | | 16.03.17 | Fixed and Floating-point Numbers | „ | | |
| 21 | | 10.03.17 | Fixed and Floating-point Numbers(cont.), Tutorials | „ | | |
| 22 | 4/7 | 10.03.17 | Storage elements | „ | | 50% |
| 23 | | 11.03.17 | Storage elements(cont.) | | | |
| 24 | | 12.03.17 | Counters | PPT, Board, chalk, duster | | |
| 25 | | 14.03.17 | Sequential Datapaths and Control | „ | | |
| 26 | | 17.03.17 | Clocked Synchronous Timing Methodology | „ | | |

| | | | | | | |
|----|-----|----------|-------------------------------------------------------------------------------|---------------------------|---------------|-------|
| 27 | | 18.03.17 | Clocked Synchronous Timing Methodology(cont.) | „ | Assignmnt –IV | |
| 28 | | 20.03.17 | Example Programs | „ | | |
| 29 | 5/6 | 21.03.17 | Concepts, Memory Types | „ | | 63.5% |
| 30 | | 22.03.17 | Memory Types | „ | | |
| 31 | | 23.3.17 | Memory Types(cont.) | „ | | |
| 32 | | 24.03.17 | Memory Types(cont.) | „ | | |
| 33 | | 24.03.17 | Error Detection and Correction, | PPT, Board, chalk, duster | Assignment -V | |
| 34 | | 31.03.17 | ICs | „ | | |
| 35 | 6/9 | 31.04.17 | PLDs | „ | | 75% |
| 36 | | 1.04.17 | Packaging and Circuit Boards, Interconnection and Signal Integrity, Tutorials | „ | | |
| 37 | | 3.04.17 | Embedded Computer Organization | „ | | |
| 38 | | 4.04.17 | Instruction and Data | „ | | |
| 39 | | 5.04.17 | Instruction and Data(cont.) | „ | | |
| 40 | | 7.04.17 | Instruction and Data(cont.) | „ | | |
| 41 | 5/7 | 8.04.17 | Interfacing with memory | „ | | 86.5% |
| 42 | | 10.04.17 | Interfacing with memory(cont.) | „ | | |
| 43 | | 11.04.17 | Example Programs | „ | | |
| 44 | | 12.04.17 | I/O devices | „ | | 86.5% |
| 45 | | 17.04.17 | I/O devices(cont.) | „ | | |
| 46 | | 18.04.17 | I/O devices(cont.) | „ | | |
| 47 | | 20.04.17 | I/O controllers | „ | | |

| | | | | | | |
|----|-----|----------|--------------------------------|---------------------------------|--|------|
| 48 | 7/8 | 21.04.17 | Parallel Buses | „ | | 100% |
| 49 | | 24.04.17 | Parallel Buses(cont.) | PPT, Board, chalk, duster | | |
| 50 | | 27.4.17 | Serial Transmission | „ | | |
| 51 | | 2.5.17 | I/O software | „ | | |
| 52 | 4/8 | 3.5.17 | I/O software(cont.), Tutorials | „ | | |
| 53 | | 5.5.17 | Concepts | „ | | |
| 54 | | 12.4.17 | Case study | „ | | |
| 55 | | 13.4.17 | Case study(cont.) | „ | | |
| 56 | | 16.4.17 | Verification of accelerators | „ | | |
| 57 | | 18.5.17 | Verification of accelerators | „ | | |
| 58 | | 20.5.17 | Design flow | „ | | |
| 59 | | 22.5.17 | Design flow(cont.) | „ | | |
| 60 | | 23.5.17 | Revision | „ | | |
| 61 | | 24.5.17 | Revision | „ | | |

Signature of faculty

Signature of HOD

Signature of Principal