# Subject :- MGMT

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037

#### T:+9180 28524466 / 77

#### **CMR INSTITUTE**

**OF TECHNOLOGY** 



Session wise – Course Plan

## Department of Electrical And Electronics Engg

| SEMESTER    | : V       | NAME OF THE FACULTY | :  | Mr. Anup H A |
|-------------|-----------|---------------------|----|--------------|
| BRANCH      | : EEE     | DATE OF COMMENCEMEN | Т: | 28.08.2016   |
| SUBJECT     | : M&E     | DATE OF CLOSING     | :  | 21.11.2016   |
| SUBJECT COD | E: 10AL51 | CLASS STRENGTH      | :  | 137          |
| NO OF HRS/W | /K :5     | TOTAL HOURS         | :  | 58           |

|               | Chapter no                               | DATE       | Topics planned for the session  | Teaching         | Assignme                                   | Topics                        |
|---------------|--|------------|---|------------------|--|-------------------------------|
| Session<br>No | (No of hrs<br>planed for the<br>chapter) |            |   | Aids             | nts/Tests<br>planned<br>for the<br>chapter | cover<br>ed<br>As per<br>plan |
| 1             | 1/10                                     | 28-07-2016 | Introduction to Management<br>and Nature and Characteristics<br>of Management | Board &<br>chalk |  |                               |
| 2             | 1/10                                     | 02-08-2016 | Scope of Management and functional areas of                                   | "                |  |                               |

|    |      |            | management.  |    |                   |  |
|----|------|------------|--|----|-------------------|--|
| 3  | 1/10 | 04-08-2016 | Functional areas of<br>Management and<br>Management as an art,<br>science or profession.                                     | ,, |                   |  |
| 4  | 1/10 | 05-08-2016 | Administration and<br>Management and Managerial<br>effectiveness   | "  |                   |  |
| 5  | 1/10 | 06-08-2016 | Roles of Manager and<br>Evolution of Management<br>thought   | "  |                   |  |
| 6  | 1/10 | 09-08-2016 | Evolution of Management<br>thought- Early Management<br>Approach (Scientific<br>Management and<br>Administrative Management) | ,, |                   |  |
| 7  | 1/10 | 12-08-2016 | Evolution of Management<br>thought- Early Management<br>Approach (Administrative<br>Management)                              | "  |                   |  |
| 8  | 1/10 | 12-08-2016 | Evolution of Management<br>thought- Early Management<br>Approach (Bureaucracy)   | "  |                   |  |
| 9  | 1/10 | 16-08-2016 | Evolution of Management<br>thought- Modern Approach  | "  | Assignme<br>nt- I |  |
| 10 | 1/10 | 16-08-2016 | Evolution of Management<br>thought- Neo-Classical<br>Approach.   | ,, |                   |  |
|    |      | ]          | UNIT 2 PLANNING  |    |                   |  |

| 11 | 2/8 | 18-08-2016 | Planning and necessity of   | Board &             |                  |  |
|----|-----|------------|---|---------------------|------------------|--|
|    |     |            | Planning  | chalk               |                  |  |
| 12 | 2/8 | 20-08-2016 | Necessity of Planning and<br>Purpose of Planning  | ,,                  |                  |  |
| 13 | 2/8 | 22-08-2016 | Purpose of Planning   | ,,                  |                  |  |
| 14 | 2/8 | 23-08-2016 | Types of Plans- Vision, Mission<br>and Objectives   | 11                  |                  |  |
| 15 | 2/8 | 25-08-2016 | Types of Plans- Objectives and<br>Strategic and Tactical Planning                               | ,,,                 |                  |  |
| 16 | 2/8 | 27-08-2016 | Types of Plans- Policy,<br>Procedure and Rules;<br>Hierarchy of Planning                        | ,,                  |                  |  |
| 17 | 2/8 | 29-08-2016 | Steps in Planning and Planning premises   | Seminar by students | Assignme<br>nt 2 |  |
| 18 | 2/8 | 29-08-2016 | Decision Making   | ,,,                 |                  |  |
|    |     | UNIT       | <b>5 ENTREPRENEURSHI</b>  |                     |                  |  |
| 18 | 5/6 | 10-09-2016 | Introduction to<br>entrepreneurship   |                     |                  |  |
| 19 | 5/6 | 10-09-2016 | Entrepreneurship- Meaning<br>and evolution of concept and<br>Characteristics of<br>Entrepreneur | PPT                 |                  |  |
| 20 | 5/6 | 13-09-2016 | Qualities of Entrepreneur and<br>Functions of an entrepreneur                                   | ,,                  |                  |  |
| 21 | 5/6 | 14-09-2016 | Types of Entrepreneur and<br>Intrapreneur   | ,,                  |                  |  |
| 22 | 5/6 | 15-09-2016 | Concept and Evolution of<br>Entrepreneurship;   | ,,,                 |                  |  |

|    |     |            | Development of   |   |                  |  |
|----|-----|------------|--|---|------------------|--|
|    |     |            | Entrepreneurship   |   |                  |  |
| 23 | 5/6 | 16-09-2016 | Stages in Entrepreneurial<br>Process and Role of<br>Entrepreneurs in economic<br>development   | "                                       | Assignme<br>nt 5 |  |
| 24 | 5/6 | 19-09-2016 | Entrepreneurship in India and<br>Barriers to Entrepreneurship                                  | ,,                                      |                  |  |
| 25 | 5/6 | 19-09-2016 | Revision of entrepreneurship   |   |                  |  |
|    |     | UNIT 8 I   | PREPARATION OF PROJ  | ЕСТ                                     |                  |  |
| 26 | 8/7 | 21-09-2016 | Introduction to project planning   | РРТ                                     |                  |  |
| 27 | 8/7 | 21-09-2016 | Meaning of Project, Project<br>Identification & Project<br>Selection                           | ,,                                      |                  |  |
| 28 | 8/7 | 22-09-2016 | Project report, contents of<br>project report and Project<br>Formulation                       | ,,                                      |                  |  |
| 29 | 8/7 | 23-09-2016 | Guidelines by Planning<br>Commission.  | ,,                                      |                  |  |
| 30 | 8/7 | 26-09-2016 | Network Analysis- PERT and<br>CPM  | "                                       |                  |  |
| 31 | 8/7 | 27-09-2016 | Errors of Project Report and<br>Project Appraisal  | ,,                                      | Assignme<br>nt-8 |  |
| 32 | 8/7 | 28-09-2016 | Identification of Business<br>opportunities  | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |                  |  |
|    | 8/7 | 29-09-2016 | Market Feasibility Study and<br>Technical Feasibility Study<br>Financial Feasibility Study and | Seminar by students                     |                  |  |
| 33 |     |            | Social Feasibility Study   |   |                  |  |

| 34 | 8/7 | 29-09-2016 | Revision of project planning and preparation                            |      |                  |  |
|----|-----|------------|---|------|------------------|--|
|    |     | UNIT 3 OI  | <b>RGANIZATION AND STAF</b>   | FING |                  |  |
| 35 | 3/8 | 05-10-2016 | Introduction to organization & Staffing                                 |      |                  |  |
| 36 | 3/8 | 05-10-2016 | Nature and Purpose of<br>Organization and Principles of<br>Organization | РРТ  |                  |  |
| 37 | 3/8 | 06-10-2016 | Types of Organization   | "    |                  |  |
| 38 | 3/8 | 07-10-2016 | Departmentation   | "    | Assignme<br>nt 3 |  |
| 39 | 3/8 | 08-10-2016 | Centralization vs.<br>Decentralization                                  | "    |                  |  |
| 40 | 3/8 | 13-10-2016 | Span of Control and MBO   | "    |                  |  |
| 41 | 3/8 | 17-10-2016 | MBO, MBE and Staffing   | ,,   |                  |  |
| 42 | 3/8 | 18-10-2016 | Selection   | "    |                  |  |
| 43 | 3/8 | 19-10-2016 | Selection and Recruitment   | "    |                  |  |
| 44 | 3/8 | 19-10-2016 | Revision of organization and staffing                                   |      |                  |  |
|    | I   | UNIT 6     | SMALL SCALE INDUSTR   | IES  |                  |  |
| 45 |     | 21-10-2016 | Introduction and significance of SSI                                    |      |                  |  |
| 45 |     | 21-10-2016 | Definition, Characteristics and Need and Rationale                      | РРТ  |                  |  |
| 46 |     | 27-10-2016 | Objectives, Scope, Role of SSI's and Advantages                         | "    |                  |  |

|    |     | 28-10-2016 | Steps to Start SSI and          | ,,         | Assignme |  |
|----|-----|------------|---------------------------------|------------|----------|--|
|    |     |            | Government Policies- Different  |            | nt 6     |  |
| 47 |     |            | Policies- Overview of Each IPR. |            |          |  |
|    |     | 02-11-2016 | Government Support and          | ,,         |          |  |
| 48 |     |            | Impact of LPG on SSIs           |            |          |  |
|    |     | 03-11-2016 | GATT and WTO Ancillary          |            |          |  |
| 49 |     |            | Industries and Tiny Industries. |            |          |  |
|    |     | 03-11-2016 | Discussion of SSI in and around |            |          |  |
| 50 |     |            | Bangalore                       |            |          |  |
|    |     | UNIT 7     | INSTITUTIONAL SUPPO             | RT         | I        |  |
|    | 7/2 | 04-11-2016 |                                 | Seminar by | Assignme |  |
| 51 |     |            |                                 | students   | nt 7     |  |
| 52 | 7/2 | 05-11-2016 |                                 | ,,         |          |  |
|    |     | UNIT 4 DI  | RECTING AND CONTROL             | LLING      | I        |  |
|    | 4/3 | 07-11-2016 | Meaning and nature of           | PPT        | Assignme |  |
| 53 |     |            | directing and leadership        |            | nt 8     |  |
|    | 4/3 | 07-11-2016 | Leadership styles and           | ,,         |          |  |
| 54 |     |            | Motivation                      |            |          |  |
|    | 4/3 | 08-11-2016 | Motivation and                  | ,,         |          |  |
| 55 |     |            | Communication; co-ordination    |            |          |  |
| 56 |     | 08-11-2016 | G D old question papers         |            |          |  |
| 57 |     | 09-11-2016 | G D old question papers         |            |          |  |
| 58 |     | 09-11-2016 | G D old question papers         |            |          |  |

Signature of HOD

## Subject :- SS

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### CMR INSTITUTE OF TECHNOLOGY



Session wise – Course Plan

### **Department of Telecommunication**

SEMESTER :V BRANCH :EEE SUBJECT :Signals& Systems SUBJECT CODE :10EE52 NO OF HRS/WK :6 NAME OF THE FACULT : Mrs.Alka RajDATE OF COMMENCEMENT:25.07.2016DATE OF CLOSING:09.11.2016CLASS STRENGTH:67TOTAL HRS:76

| n | Chapter no<br>(No of hrs<br>planed for the<br>chapter) | DATE       | Topics planned for the session  | Teaching<br>Aids       | T ( | Topics<br>covered<br>As per<br>plan |
|---|--|------------|---|------------------------|-----|-------------------------------------|
| 1 | 1/0  | 25-07-2016 | identity, partial fraction, summation problems  | Board,chalk,<br>duster | A1  |                                     |
| 2 | 1/1  | 26-07-2016 | Introduction: Signals, Classification of signals: cont.<br>and discrete time signals, Elementary Continuous<br>time signals | ,,                     | A2  |                                     |
| 3 | 2/1  | 27-07-2016 | Elementary Discrete time signals  | ,,,                    |     |                                     |
| 4 | 3/1  | 28-07-2016 | Basic operations on signals –Amplitude Scaling,<br>Addition - Problems  | "                      |     |                                     |
| 5 | 4/1  | 28-07-2016 | Basic operations on signals – Multiplication,<br>Differentiation, Integration –Problems                                     | "                      |     |                                     |
| 6 | 5/1  | 29-07-2016 | Basic operations on signals –Time Scaling, Time shifting, Reflection–Problems   | "                      |     |                                     |
| 7 | 6/1  | 30-07-2016 | Basic operations on signals –Precedence rule for time shifting and time scaling–Problems                                    | ,,                     |     |                                     |

| 8  | 7/1        | 1-08-2016  | Classification of signals: Even and Odd signals–<br>Problems                  | "  |    |  |
|----|------------|------------|---|----|----|--|
| 9  | 8/1        | 2-08-2016  | Classification of signals: Periodic and Non periodic signal–Problems          | ,, |    |  |
| 10 | 9/1        | 3-08-2016  | System –Properties of System: Stability, Memory,<br>Causality, Invertibility. | ,, |    |  |
| 11 | 10/1       | 4-08-2016  | Properties of System: Time Invariance, Linearity                              | ,, |    |  |
| 12 | 1/2 and 3  | 4-08-2016  | LTI System, Convolution Sum - Properties                                      | ,, | A3 |  |
| 13 | 2/2 and 3  | 6-08-2016  | Convolution sum : Problems  | "  |    |  |
| 14 | 3/2 and 3  | 8-08-2016  | Convolution sum : Problems  | "  |    |  |
| 15 | 4/2 and 3  | 9-08-2016  | Convolution sum : Problems  | "  |    |  |
| 16 | 5/2 and 3  | 10-08-2016 | Convolution integral- Properties  | "  |    |  |
| 17 | 6/2 and 3  | 11-08-2016 | Convolution integral: Problems  | "  |    |  |
| 18 | 7/2 and 3  | 11-08-2016 | Convolution integral: Problems  | ,, |    |  |
| 19 | 8/2 and 3  | 16-08-2016 | Convolution integral: Problems  | ,, |    |  |
| 20 | 9/2 and 3  | 17-08-2016 | Impulse Response- Properties  | "  |    |  |
| 21 | 10/2 and 3 | 18-08-2016 | Stability and causality of the system for the impulse response, Step Response | "  |    |  |
| 22 | 11/2 and 3 | 19-08-2016 | Solution of differential equation   | ,, | A4 |  |
| 23 | 12/2 and 3 | 20-08-2016 | Solution of differential equation   | ,, |    |  |
| 24 | 13/2 and 3 | 20-08-2016 | Solution of difference equation   | ,, |    |  |

| 25 | 14/2 and 3 | 23-08-2016 | Solution of difference equation                         | ,, |    |  |
|----|------------|------------|---|----|----|--|
| 26 | 15/2 and 3 | 24-08-2016 | Block diagram representation                            | ,, |    |  |
| 27 | 16/2 and 3 | 25-08-2016 | Block diagram representation                            | ,, |    |  |
| 28 | 1/4        | 26-08-2016 | Fourier representation: Introduction-<br>Fourier series | ,, | A5 |  |
| 29 | 2/4        | 27-08-2016 | Fourier series-Problems                                 | ,, |    |  |
| 30 | 3/4        | 27-08-2016 | Properties of Fourier series -Problems                  | ,, |    |  |
| 31 | 4/4        | 29-08-2016 | Properties of Fourier series -Problems                  | ,, |    |  |
| 32 | 5/4        | 30-08-2016 | Properties of Fourier series -Problems                  | ,, |    |  |
| 33 | 6/4        | 31-08-2016 | DTFS-Introduction                                       | ,, |    |  |
| 34 | 7/4        | 1-09-2016  | DTFS-Problems   | ,, |    |  |
| 35 | 8/4        | 2-09-2016  | Properties of DTFS-Problems                             | ,, |    |  |
| 36 | 9/4        | 9-09-2016  | Properties of DTFS-Problems                             | ,, |    |  |
| 37 | 10/4       | 9-09-2016  | Properties of DTFS-Problems                             | ,, |    |  |
| 38 | 1/5        | 10-09-2016 | Fourier Transform-Problems                              | ,, | A6 |  |
| 39 | 2/5        | 13-09-2016 | Fourier Transform-Problems                              | ,, |    |  |
| 40 | 3/5        | 14-09-2016 | Properties of Fourier Transform -Problems               | ,, |    |  |
| 41 | 4/5        | 15-09-2016 | Properties of Fourier Transform -Problems               | ,, |    |  |

| 42 | 5/5       | 16-09-2016 | Properties of Fourier Transform -Problems | "  |    |  |
|----|-----------|------------|---|----|----|--|
| 43 | 6/5       | 17-09-2016 | Frequency response of LTI system          | "  |    |  |
| 44 | 7/5       | 17-09-2016 | Solution of differential equation         | ,, |    |  |
| 45 | 1/6       | 20-09-2016 | DTFT - Problems                           | ,, | А7 |  |
| 46 | 2/6       | 21-09-2016 | DTFT -Problems                            | ,, |    |  |
| 47 | 3/6       | 22-09-2016 | Properties of DTFT -Problems              | ,, |    |  |
| 48 | 4/6       | 23-09-2016 | Properties of DTFT -Problems              | ,, |    |  |
| 49 | 5/6       | 24-09-2016 | Properties of DTFT -Problems              | ,, |    |  |
| 50 | 6/6       | 24-09-2016 | Frequency response of LTI system          | ,, |    |  |
| 51 | 7/6       | 27-09-2016 | Solution of difference equation           | ,, |    |  |
| 52 | 1/7 and 8 | 28-09-2016 | Z Transform – Introduction-Problems       | "  | A8 |  |
| 53 | 2/7 and 8 | 29-09-2016 | Properties of ROC                         | "  |    |  |
| 54 | 3/7 and 8 | 3-10-2016  | Z Transform – Problems                    | "  |    |  |
| 55 | 4/7 and 8 | 4-10-2016  | Z Transform -Properties                   | ,, |    |  |
| 56 | 5/7 and 8 | 4-10-2016  | Z Transform -Properties                   | "  |    |  |
| 57 | 6/7 and 8 | 6-10-2016  | Z Transform -Properties                   | "  |    |  |
| 58 | 7/7 and 8 | 7-10-2016  | Inverse Z-Transform–Problems              | "  | А9 |  |

| 59 | 8/7 and 8  | 8-10-2016  | Inverse Z-Transform–Problems               | ,,  |  |
|----|------------|------------|--|-----|--|
| 60 | 9/7 and 8  | 13-10-2016 | Inverse Z-Transform–Problems               | ,,  |  |
| 61 | 10/7 and 8 | 14-10-2016 | Analysis of LTI systems, Transfer function | ,,  |  |
| 62 | 11/7 and 8 | 14-10-2016 | Stability and Causality                    | ,,, |  |
| 63 | 12/7 and 8 | 18-10-2016 | Unilateral Z-Transform                     | ,,  |  |
| 64 | 13/7 and 8 | 19-10-2016 | Solution of difference equation            | "   |  |
| 65 |            | 20-10-2016 | Revision-Unit1                             | ,,  |  |
| 66 |            | 21-10-2016 | Revision-Unit2                             | ,,  |  |
| 67 |            | 22-10-2016 | Revision-Unit3                             | ,,  |  |
| 68 |            | 22-10-2016 | Revision-Unit4                             | ,,  |  |
| 69 |            | 28-10-2016 | Revision-Unit5                             | ,,  |  |
| 70 |            | 2-11-2016  | Revision-Unit6                             | ,,  |  |
| 71 |            | 3-11-2016  | Revision-Unit7                             | ,,  |  |
| 72 |            | 4-11-2016  | Revision-Unit8                             | ,,  |  |
| 73 |            | 5-11-2016  | Revision                                   | "   |  |
| 74 |            | 5-11-2016  | Revision                                   | u   |  |
| 75 |            | 8-11-2016  | Test – Part A                              | u   |  |
| 76 |            | 9-11-2016  | Test – Part B                              | u   |  |
|    |            |            |  |     |  |

Signature of HOD

# Subject :- EPTD

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## **CMR INSTITUTE**

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Session wise - Course Plan

## **Department of Electrical And Electronics Engg**

| SEMESTER :   | V          | NAME : Ms. T Aruna Kuma | uri          |
|--------------|------------|-------------------------|--------------|
| BRANCH       | : EEE      | DATE OF COMMENCEMEN     | T:28.08.2016 |
| SUBJECT      | : T & D    | DATE OF CLOSING         | : 21.11.2016 |
| SUBJECT COD  | E : 10EE53 | CLASS STRENGTH          | : 60         |
| NO OF HRS/WI | K : 5      | TOTAL HOURS             | : 60         |

|                   | Chapter no                               | DATE     | Topics planned for the session         | Teaching | Assignm   | Topics                        |
|-------------------|--|----------|--|----------|---|-------------------------------|
| Sessi<br>on<br>No | (No of hrs<br>planed for the<br>chapter) |          |  | Aids     | ents/<br>Tests<br>planned<br>for the<br>chapter | covere<br>d<br>As per<br>plan |
| 1                 | 1/4                                      | 1/8/2016 | UNIT - 1TYPICAL                        | Board &  | Assignm<br>ent- I                               |                               |
|                   |  |          | TRANSMISSION &<br>DISTRIBUTION SYSTEMS | chalk    |   |                               |
|                   |  |          | SCHEME                                 |          |   |                               |
| 2                 | 2/4                                      | 2/8/2016 | General layout of power                | "        |   |                               |
|                   |  |          | system, Standard voltages for          |          |   |                               |



|    |     |           | transmission.  |                            |                     |  |
|----|-----|-----------|--|----------------------------|---------------------|--|
| 3  | 3/4 | 3/8/2016  | Advantages of high voltage transmission.   | "                          |                     |  |
| 4  | 4/4 | 5/8/2016  | Transmission line efficiency<br>and line drop. Feeders,<br>distributors & service mains.               | "                          |                     |  |
| 5  | 1/7 | 6/8/2016  | UNIT - 20VERHEAD<br>TRANSMISSION LINES-<br>Types of supporting structures<br>and line conductors used. | "                          | Assignm<br>ent -II  |  |
| 6  | 2/7 | 8/8/2016  | Sag calculation- supports at same level, numerical   | "                          |                     |  |
| 7  | 3/7 | 9/8/2016  | Sag calculation- supports at at different levels, numerical  | "                          |                     |  |
| 8  | 4/7 | 10/8/2016 | Effect of wind and ice, Sag at erection. Numerical.  | Board,<br>chalk,<br>duster |                     |  |
| 9  | 5/7 | 11/8/2016 | Stringing chart and sag templates.   | "                          |                     |  |
| 10 | 6/7 | 12/8/2016 | Line vibrators. Problem solving.   | >>                         |                     |  |
| 11 | 7/7 | 16/8/2016 | Numerical on unit II   | "                          |                     |  |
| 12 | 1/7 | 17/8/2016 | UNIT – 3<br>INSULATORS- Introduction,<br>materials used, types.  | "                          | Assignm<br>ent -III |  |
| 13 | 2/7 | 18/8/2016 | Potential distribution over a string of suspension insulators.   | "                          |                     |  |
| 14 | 3/7 | 19/8/2016 | String efficiency & methods of increasing strings efficiency,  | "                          |                     |  |
| 15 | 4/7 | 20/8/2016 | Grading rings and arcing<br>horns.Testing of insulators.   |                            |                     |  |
| 16 | 5/7 | 22/8/2016 | Numericals on unit III   |                            |                     |  |

| 17  | 6/7  | 23/8/2016 | Numericals on unit III                                       |        |                    |
|-----|------|-----------|--|--------|--------------------|
|     |      |           |  |        |                    |
| 18  | 7/7  | 24/8/2016 | Numericals on unit III                                       | "      |                    |
| 19  | 1/9  | 25/8/2016 | UNIT - 4   | >>     | Assignm<br>ent –IV |
|     |      |           | (A)CORONA- Phenomena,  |        |                    |
| 20  | 2/9  | 26/8/2016 |  |        |                    |
| 20  | 2/9  | 20/8/2010 | Disruptive and visual critical voltages. Numericals.         | "      |                    |
| 21  | 3/9  | 27/8/2016 | Corona power   | 22     |                    |
|     |      |           | loss. Numericals.  |        |                    |
| 22  | 4/9  | 30/8/2016 | Advantages and disadvantages of corona.                      | 22     |                    |
| 23  | 5/9  |           | (B)UNDERGROUND   |        |                    |
|     |      |           | CABLES- Types, material                                      |        |                    |
| 2.4 | (10) | 1/0/0016  | used.  | D 1    |                    |
| 24  | 6/9  | 1/9/2016  | Insulation resistance, thermal rating of cables.             | Board, |                    |
|     |      |           | racing of cables.  | chalk, |                    |
|     |      |           |  | duster |                    |
| 25  | 7/9  | 9/9/2016  | Charging current, grading of                                 | 22     |                    |
|     |      |           | cables, capacitance grading.                                 |        |                    |
| 26  | 8/9  | 10/9/2016 | Inter sheath grading.  | "      |                    |
| 27  | 9/9  | 13/9/2016 | Testing of cables.   | "      |                    |
| 28  | 1/16 | 14/9/2016 | UNIT – 5 and 6   | "      | Assignm            |
|     |      |           |  |        | nt –V              |
|     |      |           | Line parameters:   |        |                    |
|     | 2/17 |           |  |        |                    |
| 29  | 2/16 | 16/9/2016 | calculation of inductance of                                 | "      |                    |
|     |      |           | single phase line,   |        |                    |
| 30  | 3/16 | 19/9/2016 |  |        |                    |
| 50  | 5/10 | 19/9/2010 | Flux linkages of one conductor<br>in an array. Inductance of | "      |                    |
|     |      |           | in an array. Inductance of                                   |        |                    |

|    |       |           | composite conductor lines.  |                  |                    |  |
|----|-------|-----------|---|------------------|--------------------|--|
| 31 | 4/16  | 21/9/2016 | 3phase lines with equilateral spacing.  | >>               |                    |  |
| 32 | 5/16  | 23/9/2016 | 3phase lines with unsymmetrical spacing.  | >>               |                    |  |
| 33 | 6/16  | 24/9/2016 | Double circuit and transposed lines. Inductance of composite                    | Board,           |                    |  |
|    |       |           | conductor lines.  | chalk,<br>duster |                    |  |
| 34 | 7/16  | 26/9/2016 | Capacitance- of single-phase line,  | "                |                    |  |
| 35 | 8/16  | 27/9/2016 | Potential difference b/w two<br>conductors of a group of<br>charged conductors. | 22               | Assignm<br>ent -VI |  |
| 36 | 9/16  | 28/9/2016 | 3phase lines with equilateral spacing, unsymmetrical spacing.                   | "                |                    |  |
| 37 | 10/16 | 29/9/2016 | Capacitance- of double circuit<br>and transposed lines.                         | "                |                    |  |
| 38 | 11/16 | 3/10/2016 | Capacitance of composite conductor lines.                                       | >>               |                    |  |
| 39 | 12/16 | 4/10/2016 | Problems on unit V & VI   | >>               |                    |  |
| 40 | 13/16 | 5/10/2016 | Problems on unit V & VI   | "                |                    |  |
| 41 | 14/16 | 6/10/2016 | Problems on unit V & VI   | >>               |                    |  |
| 42 | 15/16 | 7/10/2016 | Problems on unit V & VI   | "                |                    |  |
| 43 | 16/16 | 8/10/2016 | Problems on unit V & VI   | ,,               |                    |  |

| 44 | 1/6  | 13/10/2016 | UNIT - 7                         | >>               | Assignm<br>ent -VII |  |
|----|------|------------|----------------------------------|------------------|---------------------|--|
|    |      |            | Performance of power             |                  |                     |  |
|    |      |            | transmission lines- Short        |                  |                     |  |
|    |      |            | transmission lines               |                  |                     |  |
| 45 | 2/6  | 17/10/2016 | T, end condenser and $\pi$       | "                |                     |  |
|    |      |            | models.                          |                  |                     |  |
| 46 | 3/6  | 18/10/2016 | , medium transmission lines-     | "                |                     |  |
|    |      |            | nominal                          |                  |                     |  |
| 47 | 4/6  | 19/10/2016 | Long transmission lines,         | >>               |                     |  |
|    |      |            | ABCD constants of                |                  |                     |  |
|    |      |            | transmission lines.              |                  |                     |  |
| 48 | 5/6  | 21/10/2016 | Ferranti                         | >>               |                     |  |
|    |      |            |                                  |                  |                     |  |
|    |      |            | effect, line regulation          |                  |                     |  |
| 49 | 6/6  | 22/10/2016 | Numericals on unit VII           | Board,           |                     |  |
|    |      |            |                                  | chalk,<br>duster |                     |  |
|    |      |            |                                  | uustei           |                     |  |
| 50 | 1/11 | 27/10/2016 | UNIT - 8                         | "                | Assignm             |  |
|    |      |            |                                  |                  | ent -VIII           |  |
|    |      |            | Distribution- Requirements of    |                  |                     |  |
| 51 | 2/11 | 27/10/2016 | power distribution.              |                  |                     |  |
| 51 | 2/11 | 27/10/2010 | radial & ring main systems,      | "                |                     |  |
| 52 | 3/11 | 28/10/2016 | numerical.                       |                  |                     |  |
| 32 | 5/11 | 28/10/2010 | ac distribution:                 | >>               |                     |  |
|    |      |            | calculation for concentrated     |                  |                     |  |
|    |      |            | loads                            |                  |                     |  |
| 53 | 4/11 | 28/10/2016 | ac distribution: calculation for | РРТ              |                     |  |
|    |      |            | and uniform loading.             |                  |                     |  |
| 54 | 5/11 | 2/11/2016  | dc distribution:                 | ,,               |                     |  |
|    |      |            |                                  | 22               |                     |  |
|    |      |            | calculation for concentrated     |                  |                     |  |
|    |      |            | loads                            |                  |                     |  |
| 55 | 6/11 | 3/11/2016  | dc distribution: calculation for | Board/Cha        |                     |  |
|    |      |            | and uniform loading.             | lk               |                     |  |
| 5( | 7/11 | 4/11/2016  |                                  |                  |                     |  |
| 56 | 7/11 | 4/11/2016  | Numericals on unit VIII          | "                |                     |  |
| 57 | 8/11 | 5/11/2016  | Numericals on unit VIII          | PPT/Boar         |                     |  |

|    |       |           |          | d/Chalk,, |  |
|----|-------|-----------|----------|-----------|--|
| 58 | 9/11  | 5/11/2016 | Revision | "         |  |
| 59 | 10/11 | 7/11/2016 | Revision | >>        |  |
| 60 | 11/11 | 7/11/2016 | Revision | >>        |  |

Signature of HOD

# Subject :- DSM

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037

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#### **CMR INSTITUTE**

**OF TECHNOLOGY** 



Session wise – Course Plan

### **Department of Electrical And Electronics Engg**

| SEMESTER     | : V        | NAME OF THE FACULTY  | : Mr Sudhakar Vitta |
|--------------|------------|----------------------|---------------------|
| BRANCH       | : EEE      | DATE of Commencement | t : 28.08.2016      |
| SUBJECT      | : DCM & SM | DATE OF CLOSING      | : 21.11.2016        |
| SUBJECT CODE | : 10EE54   | CLASS STRENGTH       | : 69                |
| NO OF HRS/WK | 5          | TOTAL HOURS          | : 60                |

| Sessi<br>on<br>No | Session no<br>within the<br>planned<br>unit hours | DATE        | Topics planned for the session | Teaching<br>Aids | Assign<br>ments<br>/<br>Tests<br>plann<br>ed for<br>the<br>chapt<br>er | Topics<br>cover<br>ed<br>As per<br>plan |
|-------------------|---|-------------|--------------------------------|------------------|--|---|
| 1                 | Unit-1  |             |                                | Board & Chalk    | Prere  |   |
|                   | 1/10  | 28 Jul 2016 |                                |                  | quisit<br>e  |   |

|    |                       |             | Introduction to Electrical Machines                |                | Assign |  |
|----|-----------------------|-------------|--|----------------|--------|--|
|    |                       |             |  |                | ment   |  |
|    |                       |             |  |                | ment   |  |
|    | <b>a</b> / 1 <b>a</b> |             |  | Deard & Challe |        |  |
| 2  | 2/10                  | 29 Jul 2016 | Basics of DC Machines                              | Board & Chalk  |        |  |
|    |                       | 29 Jul 2016 | Basics of DC Machines                              |                |        |  |
|    |                       |             |  |                |        |  |
| 3  | 3/10                  |             |  | Board & Chalk  |        |  |
|    | 3710                  | 01 Aug 2016 | Construction of DC Machines                        |                |        |  |
|    |                       | _           |  |                |        |  |
|    |                       |             |  |                |        |  |
| 4  | 4/10                  |             |  | Board & Chalk  |        |  |
|    |                       | 03 Aug 2016 | EMF equation. Armature windings.                   |                |        |  |
|    |                       |             |  |                |        |  |
| 5  | 5/10                  |             |  | Board & Chalk  |        |  |
|    | 0110                  | 04 Aug 2016 | Lap winding & Equalizer rings                      |                |        |  |
|    |                       | 017 kg 2010 |  |                |        |  |
|    |                       |             |  |                |        |  |
| 6  | 6/10                  |             |  | Board & Chalk  |        |  |
|    |                       | 05 Aug 2016 | Wave windings                                      |                |        |  |
|    |                       |             |  |                |        |  |
|    | = /                   |             |  | Board & Chalk  |        |  |
| 7  | 7/10                  | 06 Aug 2016 | Armatura reaction & Companyating windings          | Board & Chaik  |        |  |
|    |                       | 06 Aug 2016 | Armature reaction & Compensating windings          |                |        |  |
|    |                       |             |  |                |        |  |
| 8  | 8/10                  |             |  | Board & Chalk  |        |  |
| _  | 0, 20                 | 08 Aug 2016 | Commutation, types, effects, remedies & interpoles |                |        |  |
|    |                       |             |  |                |        |  |
|    |                       |             |  |                |        |  |
| 9  | 9/10                  | 10.0.0010   |  | Board & Chalk  |        |  |
|    |                       | 10 Aug 2016 | Classification of DC machines                      |                |        |  |
|    |                       |             |  |                |        |  |
| 10 | 10/10                 |             |  | Board & Chalk  | Assig  |  |
|    | 10/10                 | 10.4        |  |                | -      |  |
|    |                       | 10 Aug 2016 | Characteristics of DC Generators                   |                | nmen   |  |
|    |                       |             |  |                | t-1    |  |
|    |                       |             |  |                |        |  |
| 11 | Unit-2                |             | DC Motors: Classification, Back EMF and its        | Board & Chalk  |        |  |
|    |                       | 11 Aug 2016 | significance, Torque Equation and types of         |                |        |  |
|    | 1/8                   |             | characteristics                                    |                |        |  |
|    |                       |             |  |                |        |  |
| 12 | 2/8                   | 124.00.0016 | Characteristics of DC Maters                       | Board & Chalk  |        |  |
|    |                       | 12Aug 2016  | Characteristics of DC Motors                       |                |        |  |
|    |                       |             |  |                |        |  |
| 13 | 3/8                   | 16 Aug 2016 | Problems & Solutions                               | Board & Chalk  |        |  |
|    | 5,0                   |             |  |                |        |  |
| I  | I                     |             |  |                |        |  |

| 14 | 4/8       | 17 Aug 2016    | Speed Control of DC Motors   | Board & Chalk |                        |  |
|----|-----------|----------------|--|---------------|------------------------|--|
| 15 | 5/8       | 19 Aug 2016    | Speed control of DC Motors (Series & Compound)   | Board & Chalk |                        |  |
| 16 | 6/8       | 20 Aug 2016    | DC Motor Starting, Starters, Starting Resistance<br>Calculations                                 | Board & Chalk |                        |  |
| 17 | 7/8       | 22 Aug 2016    | Ward-Leonard Speed Control. Problems & Solutions   | Board & Chalk |                        |  |
| 18 | 8/8       | 23 Aug 2016    | Application of DC shunt, series and compound motors. Brush-less DC motors & their applications . | Board & Chalk | Assign<br>ment -<br>II |  |
| 19 | Units-3&4 | 24 Aug 2016    | Losses in DC Machines, efficiency, Condition for<br>maximum efficiency                           | Board & Chalk |                        |  |
| 20 | 2 /7      | 24 Aug 2016    | Swinburne's test. Problems & Solutions   | Board & Chalk |                        |  |
| 21 | 3 /7      | 26 Aug 2016    | Direct, indirect Regenerative tests. Brake test.   | Board & Chalk | Assign<br>ment<br>–III |  |
| 22 | 4 /7      | 27 Aug<br>2016 | Hopkinson's test on DC Shunt Motor. Problem<br>Solving   | Board & Chalk |                        |  |
| 23 | 5 /7      | 29 Aug 2016    | Retardation Test.Problem Solving   | Board & Chalk |                        |  |
| 24 | 6 /7      | 30 Aug 2016    | Field's test.Problem Solving   | Board & Chalk |                        |  |
| 25 | 7 /7      | 31 Aug 2016    | Merits & demerits of tests.Power flow diagrams   | Board & Chalk | Assign<br>ment         |  |

|    |        |             |  |               | –IV              |  |
|----|--------|-------------|--|---------------|------------------|--|
|    |        |             |  |               |                  |  |
| 26 | Unit-5 | 09 Sep 2016 |  | Board & Chalk |                  |  |
|    | 1/7    |             | Basic principle of operation                                   |               |                  |  |
|    |        | 40.0        |  |               |                  |  |
| 27 | 2/7    | 10 Sep 2016 | Construction of salient & non-salient pole                     | Board & Chalk |                  |  |
|    |        |             | synchronous machines   |               |                  |  |
| 28 | 3/7    | 13 Sep 2016 |  | Board & Chalk |                  |  |
|    |        |             |  |               |                  |  |
|    |        |             | Generated EMF  |               |                  |  |
| 29 | 4/7    | 14 Sep 2016 |  | Board & Chalk |                  |  |
|    |        |             | Effect of distribution and chording of winding                 |               |                  |  |
| 30 | 5/7    | 16 Sep 2016 |  | Board & Chalk |                  |  |
| 50 | 5,7    |             |  |               |                  |  |
|    |        |             | Harmonics-causes, reduction and elimination                    |               |                  |  |
| 31 | 6/7    | 17 Sep 2016 |  | Board & Chalk |                  |  |
|    |        |             | Armature reaction, synchronous reactance, leakage<br>reactance |               |                  |  |
|    | - /-   | 19 Sep 2016 |  | Board & Chalk |                  |  |
| 32 | 7/7    | 19 Sep 2010 |  | Board & Chaik | Assign<br>ment - |  |
|    |        |             | Phasor diagram of non salient type alternator.                 |               | V                |  |
| 22 |        | 20 Sep 2016 |  | Board & Chalk |                  |  |
| 33 | Unit-6 | 20 000 2010 |  | Board & Chaik |                  |  |
|    | 1/11   |             | Voltage regulation by EMF method                               |               |                  |  |
| 34 | 2/11   | 21 Sep 2016 |  | Board & Chalk |                  |  |
|    | =, ==  |             |  |               |                  |  |
|    |        |             | Voltage regulation by MMF method                               |               |                  |  |
| 35 | 3/11   | 23 Sep 2016 |  | Board & Chalk |                  |  |
|    |        |             | Voltage regulation by ZPF method                               |               |                  |  |
| 20 | A /A A | 24Sep 2016  |  | Board & Chalk |                  |  |
| 36 | 4/11   | 27000 2010  |  |               |                  |  |
|    |        |             | Voltage regulation by ASA method                               |               |                  |  |
| 37 | 5/11   | 26 Sep 2016 |  | Board & Chalk |                  |  |
|    |        |             | Short circuit ratio and its importance                         |               |                  |  |
|    |        |             |  |               |                  |  |

| 38 | 6/11   | 27 Sep 2016 |  | Board & Chalk    |        |  |
|----|--------|-------------|--|------------------|--------|--|
| 50 | 0/11   |             |  |                  |        |  |
|    |        |             | Two reaction theory  |                  |        |  |
| 39 | 7/11   | 28 Sep 2016 |  | Board & Chalk    |        |  |
| 55 | //11   |             |  |                  |        |  |
|    |        |             | Direct and quadrature axis reactances                        |                  |        |  |
| 40 | 8/11   | 03 Oct 2016 |  | Board & Chalk    |        |  |
| _  | 0, ==  |             |  |                  |        |  |
|    |        |             | Phasor diagram   |                  |        |  |
| 41 | 9/11   | 04 Oct 2016 |  | Board & Chalk    |        |  |
|    | -,     |             |  |                  |        |  |
|    |        |             | Slip test and regulation.                                    |                  |        |  |
| 42 | 10/11  | 05 Oct 2016 |  | Board & Chalk    |        |  |
|    | - 1    |             |  |                  |        |  |
|    |        |             | Problem Solving  |                  |        |  |
| 43 | 11/11  | 06 Oct 2016 |  | Board & Chalk    | Assign |  |
|    |        |             |  |                  | ment - |  |
|    |        |             | Problem Solving  |                  | VI     |  |
|    |        | 07 Oct 2016 |  | Describer Challe |        |  |
| 44 | Unit-7 | 07 Oct 2016 |  | Board & Chalk    |        |  |
|    | 1/7    |             | Synchronizing to infinite bus bars                           |                  |        |  |
|    | _/ -   |             | Synemonizing to infinite bus burs                            |                  |        |  |
| 45 | 2/7    | 13 Oct 2016 |  | Board & Chalk    |        |  |
|    |        |             | Parallel operation of alternators                            |                  |        |  |
|    |        |             |  |                  |        |  |
| 46 | 3/7    | 14 Oct 2016 |  | Board & Chalk    |        |  |
|    |        |             | Operating characteristics                                    |                  |        |  |
|    |        |             |  |                  |        |  |
| 47 | 4/7    | 17 Oct 2016 |  | Board & Chalk    |        |  |
|    |        |             | Power angle characteristics excluding armature<br>resistance |                  |        |  |
|    |        |             | resistance   |                  |        |  |
| 48 | 5/7    | 18 Oct 2016 |  | Board & Chalk    |        |  |
|    |        |             | Operation for fixed input and variable excitation            |                  |        |  |
|    |        |             |  |                  |        |  |
| 49 | 6/7    | 19 Oct 2016 |  | Board & Chalk    |        |  |
|    |        |             | Power flow equations including armature resistance           |                  |        |  |
|    |        |             | i ower now equations melduing armature resistance            |                  |        |  |
| 50 | 7/7    | 21Oct 2016  | Capability curves of synchronous generators.                 | Board & Chalk    | Assign |  |
|    |        |             |  |                  | ment - |  |

|    |        |             |   |               | VII            |  |
|----|--------|-------------|---|---------------|----------------|--|
| 51 | Unit-8 | 22 Oct 2016 |   | Board & Chalk |                |  |
|    | 1/10   |             | Principle of operation                  |               |                |  |
| 52 | 2/10   | 27 Oct 2016 |   | Board & Chalk |                |  |
|    |        |             | Phasor diagrams                         |               |                |  |
| 53 | 3/10   | 28 Oct 2016 |   | Board & Chalk |                |  |
|    |        |             | Torque and torque angle                 |               |                |  |
| 54 | 4/10   | 02 Nov 2016 |   | Board & Chalk |                |  |
|    |        |             | Blondel diagram                         |               |                |  |
| 55 | 5/10   | 03Nov 2016  |   | Board & Chalk |                |  |
|    |        |             | Effect of change in load                |               |                |  |
| 56 | 6/10   | 04 Nov 2016 |   | Board & Chalk |                |  |
|    |        |             | Effect of change in excitation          |               |                |  |
| 57 | 7/10   | 05 Nov 2016 |   | Board & Chalk |                |  |
|    |        |             | V and inverted V curves                 |               |                |  |
| 58 | 8/10   | 07 Nov 2016 |   | Board & Chalk | Assign         |  |
|    |        |             | Synchronous condenser                   |               | ment -<br>VIII |  |
| 50 | 0/10   | 08Nov 2016  | Synemonious condenser                   | Roard & Chalk |                |  |
| 59 | 9/10   |             |   | Board & Chalk |                |  |
|    |        |             | Hunting and Damping                     |               |                |  |
| 60 | 10/10  | 09 Nov 2016 |   | Board & Chalk |                |  |
|    |        |             | Methods of starting synchronous motors. |               |                |  |

Signature of HOD

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#### **CMR INSTITUTE**



Session wise – Course Plan

### **Department of Electrical and Electronics**

| SEMESTER     | :V       | NAME OF THE FACULTY  | : Ms.Anju Das |
|--------------|----------|----------------------|---------------|
| BRANCH       | : EEE    | DATE OF COMMENCEMENT | : 29.07.2016  |
| SUBJECT      | : LIC    | DATE OF CLOSING      | : 19.11.2016  |
| SUBJECT CODE | : 10EE56 | CLASS STRENGTH       | : 69+66       |
| NO OF HRS/WI | < :5     | TOTAL HRS            | : 60          |

|         | Chapter no        | DATE       | Topics planned for the session   | Teaching                 | Assignme                               | Topics         |
|---------|-------------------|------------|--|--------------------------|--|----------------|
| Sessio  | (No of hrs planed |            |  | Aids                     | nts/                                   | covered        |
| n<br>No | for the chapter)  |            |  |                          | Tests<br>planned<br>for the<br>chapter | As per<br>plan |
| 1       | 1/1               | 29.07.2016 | Operational Amplifier Fundamentals:<br>circuit, CMRR and PSRR, Slew rate | Black board<br>and chalk | Prerequisite<br>Assignment<br>1        |                |
| 2       | 2/1               | 01.08.2016 |  |                          |  |                |



|    |     |            | Op-Amp parameters – Input and outp   | ut voltage, , offset |  |
|----|-----|------------|--|----------------------|--|
|    |     |            | voltages and currents, Design problen output voltage                         | ns on Input and      |  |
| 3  | 3/1 | 02.08.2016 | Capacitor coupled voltage follower   |                      |  |
| 4  | 4/1 | 3.08.2016  | High Zin capacitor coupled voltage follower                                  | Assignment<br>2      |  |
| 5  | 5/1 | 05.08.2016 | Capacitor coupled non-inverting amplifier                                    |                      |  |
| 6  | 6/1 | 06.08.2016 | High Zin capacitor coupled non-<br>inverting amplifier                       |                      |  |
| 7  | 7/1 | 08.08.2016 | Capacitor coupled inverting<br>amplifier, setting upper cut off<br>frequency |                      |  |
| 8  | 8/1 | 09.08.2016 | Capacitor coupled difference<br>amplifier                                    |                      |  |
| 9  | 9/1 | 10.08.2016 | Use of single polarity supply  |                      |  |
| 10 | 1/2 | 12.08.2016 | Op amp circuits stability  |                      |  |
| 11 | 2/2 | 16.08.2016 | Frequency and phase response   |                      |  |
| 12 | 3/2 | 17.08.2016 | Frequency compensating methods   |                      |  |
| 13 | 4/2 | 18.08.2016 | Manufacturer's recommended compensation                                      | Assignment<br>3      |  |
| 14 | 5/2 | 19.08.2016 | Op-amp circuit band width  |                      |  |
| 16 | 6/2 | 22.08.2016 | Slew rate effects, stray capacitance<br>effects load capacitance effects     |                      |  |
| 16 | 7/2 | 23.08.2016 | Zin mode compensation  |                      |  |
| 17 | 8/2 | 24.08.2016 | circuit stability precautions  |                      |  |
| 18 | 1/3 | 25.08.2016 | Precision half wave & full wave rectifiers                                   |                      |  |

| 19 | 2/3 | 26.08.2016 | Precision half wave & full wave rectifiers(cont) |                 |
|----|-----|------------|--|-----------------|
|    |     |            |  |                 |
| 20 | 3/3 | 29.08.2016 | Limiting circuits                                |                 |
| 21 | 4/3 | 30.08.2016 | clamping circuits                                | Assignment<br>4 |
| 22 | 5/3 | 31.08.2016 | Peak detectors                                   |                 |
| 23 | 6/3 | 01.09.2016 | Sample & hold circuit                            |                 |
| 24 | 7/3 | 02.09.2016 | DAC  |                 |
| 25 | 8/3 | 09.09.2016 | ADC (Flash and successive approximations)        |                 |
| 26 | 1/4 | 10.09.2016 | Op-amps in switching circuits                    |                 |
| 27 | 2/4 | 13.09.2016 | Op-amps in switching circuits                    |                 |
| 28 | 3/4 | 14.09.2016 | Zero crossing detectors                          |                 |
| 29 | 4/4 | 15.09.2016 | Inverting Schmitt trigger circuits               | Assignment<br>5 |
| 30 | 5/4 | 16.09.2016 | Non-inverting Schmitt circuits                   |                 |
| 31 | 6/4 | 19.09.2016 | Astable multivibrator                            |                 |
| 32 | 7/4 | 20.09.2016 | Monostable multivibrator.                        |                 |
| 33 | 8/4 | 21.09.2016 | Monostable multivibrator                         |                 |
| 34 | 1/5 | 22.09.2016 | Triangular wave generator                        |                 |
| 35 | 2/5 | 23.09.2016 | Rectangular wave generator                       |                 |
| 36 | 3/5 | 26.09.2016 | Waveform generator design                        |                 |
| 37 | 4/5 | 27.09.2016 | Phase shift oscillator                           | Assignment<br>6 |
| 38 | 5/5 | 28.09.2016 | Oscillator amplitude stabilization               |                 |

| 39 | 6/5 | 29.09.2016 | Wein bridge oscillator   |                 |  |
|----|-----|------------|--|-----------------|--|
| 40 | 7/5 | 03.10.2016 | Signal generators  |                 |  |
| 41 | 8/5 | 05.10.2016 | Output controllers   |                 |  |
| 42 | 1/6 | 06.10.2016 | First and second order high pass                                       |                 |  |
| 43 | 2/6 | 07.10.2016 | Low pass filter  |                 |  |
| 44 | 3/6 | 08.10.2016 | Low pass filter  |                 |  |
| 45 | 4/6 | 13.10.2016 | Band pass filter   | Assignment<br>7 |  |
| 46 | 5/6 | 17.10.2016 | Band pass filter (cont)  |                 |  |
| 47 | 6/6 | 18.10.2016 | Band stop filter   |                 |  |
| 48 | 7/6 | 19.10.2016 | Problems on all filters  |                 |  |
| 49 | 1/7 | 20.10.2016 | Universal active filter  |                 |  |
| 50 | 2/7 | 21.10.2016 | Universal active filter(cont)  |                 |  |
| 51 | 3/7 | 22.10.2016 | switched capacitor filter  |                 |  |
| 52 | 4/7 | 27.10.2016 | phase locked loops   | Assignment<br>8 |  |
| 53 | 5/7 | 28.10.2016 | phase locked loops(cont)   |                 |  |
| 54 | 6/7 | 02.11.2016 | Power amplifiers   |                 |  |
| 55 | 1/8 | 03.11.2016 | Voltage regulators basics  |                 |  |
| 56 | 2/8 | 04.11.2016 | voltage follower regulator   |                 |  |
| 57 | 3/8 | 07.11.2016 | adjustable output regulator  |                 |  |
| 58 | 4/8 | 08.11.2016 | adjustable output regulator(cont)                                      | Assignment<br>9 |  |
| 59 | 5/8 | 09.11.2016 | precision voltage regulators,<br>Integrated circuit voltage regulators |                 |  |

| 60 | 6/8 | Revision |  |  |
|----|-----|----------|--|--|
|    |     |          |  |  |

Signature of HOD

# Subject :- MCT

#132, AECS Layout, IT Park Road, Kundalahalli, Bangalore – 560 037

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### CMR INSTITUTE OF TECHNOLOGY



### Session wise – Course Plan

## Department of Electrical and Electronics Engineering

| SEMESTER     | : V                     | NAME OF THE FACULTY  | : Dr. MANAVAALAN G |
|--------------|-------------------------|----------------------|--------------------|
| BRANCH       | : EEE                   | DATE OF COMMENCEMENT | : 28.08.2016       |
| SUBJECT      | : MODERN CONTROL THEORY | DATE OF CLOSING      | : 21.11.2016       |
| SUBJECT CODE | : 10EE55                | CLASS STRENGTH       | : 135              |
| NO OF HRS/WK | : 5                     | TOTAL HOURS          | : 56               |

| Sessi<br>on<br>No | Chapter no<br>(No of hrs<br>planed for<br>the chapter) | DATE       | Topics planned for the session                      | Teaching<br>Aids | Assignments<br>/ Tests<br>planned for<br>the chapter | Topics<br>covered<br>as per<br>plan |
|-------------------|--|------------|---|------------------|--|-------------------------------------|
| 1                 | 1/9  | 29.07.2016 | Course outline and motivation for the<br>course MCT | Chalk &<br>Talk  | Prerequisite<br>Assignment                           |                                     |
| 2                 | 1/9  | 01.08.2016 | Revision of Laplace transforms and                  | "                |  |                                     |
| 3                 | 1/9  | 01.08.2016 | problems solved based on LT                         | ,,               |  |                                     |
| 4                 | 1/9  | 02.08.2016 | Introduction to the concept of state,               | ,,               |  |                                     |
| 5                 | 1/9  | 02.08.2016 | state variables and state model.                    | ,,               |  |                                     |
| 6                 | 1/9  | 03.08.2016 | State space modeling of linear systems              | ,,               | Assignment-  |                                     |
| 7                 | 1/9  | 03.08.2016 |   | ,,               | Ι  |                                     |
| 8                 | 1/9  | 08.08.2016 | Concepts of linearization, and                      | ,,,              |  |                                     |
| 9                 | 1/9  | 08.08.2016 | linearization of state equations                    | ,,               |  |                                     |
| 10                | 2/8  | 09.08.2016 | SSM of - circuits and dc motor control              | ,,               |  |                                     |
| 11                | 2/8  | 09.08.2016 | problems.   | ,,               |  |                                     |
| 12                | 2/8  | 10.08.2016 | SSM - Controllable canonical form                   | ,,               |  |                                     |
| 13                | 2/8  | 10.08.2016 |   | ,,               |  |                                     |
| 14                | 2/8  | 17.08.2016 | TF to SSM in observable canonical                   | ,,               | Assignment   |                                     |
| 15                | 2/8  | 17.08.2016 | form/II companion form.                             | "                | -II  |                                     |
| 16                | 2/8  | 18.08.2016 | TF to SSM in diagonal/Jordan canonical              | ))               |  |                                     |
| 17                | 2/8  | 18.08.2016 | form.   | ,,               |  |                                     |
| 18                | 3/8  | 19.08.2016 | Implementation of ODE using analog                  | ,,               |  |                                     |
| 19                | 3/8  | 19.08.2016 | components. Discretization of continuous SSM.       | "                |  |                                     |
| 20                | 3/8  | 24.08.2016 | Derivation of TF from SSM.                          | 11               |  |                                     |
| 21                | 3/8  | 24.08.2016 |   | 11               |  |                                     |
| 22                | 3/8  | 25.08.2016 | Eigen values, Eigen vectors and                     | Chalk &          | Assignment   |                                     |

| 23 | 3/8  | 25.08.2016 | generalized Eigen. Diagonalization of SSM.  | Talk                  | -III               |  |
|----|------|------------|---|-----------------------|--------------------|--|
| 24 | 3/8  | 26.08.2016 | Invariance of Eigen values under leaner   | ,,                    |                    |  |
| 25 | 3/8  | 26.08.2016 | transformation. Problems solved from VTU QPs.   | "                     |                    |  |
| 26 | 4/14 | 31.08.2016 | Solution of state equations, state  | "                     |                    |  |
| 27 | 4/14 | 31.08.2016 | transition matrix and its properties.   | ,,                    |                    |  |
| 28 | 4/14 | 01.09.2016 | Problems solving for response of the  | ,,                    | Assignmnt –        |  |
| 29 | 4/14 | 01.09.2016 | SSM using LT and power series method  | ,,                    | IV                 |  |
| 30 | 4/14 | 02.09.2016 | Problems solving for response of the  | ,,                    |                    |  |
| 31 | 4/14 | 02.09.2016 | SSM using LT and power series method  | ,,                    |                    |  |
| 32 | 4/14 | 14.09.2016 | State transition matrix – Cayley-Hamilton   | ,,                    |                    |  |
| 33 | 4/14 | 14.09.2016 | Method  |                       |                    |  |
| 34 | 4/14 | 15.09.2016 | Concept of Controllability and methods of   | ,,                    |                    |  |
| 35 | 4/14 | 15.09.2016 | determining the same  | "                     |                    |  |
| 36 | 4/14 | 16.09.2016 | Concept of Observability and methods of   | ,,                    | Assignment         |  |
| 37 | 4/14 | 16.09.2016 | determining the same  | ,,,                   | -V                 |  |
| 38 | 4/14 | 21.09.2016 | Concept of duality – Controllability and  | ,,                    |                    |  |
| 39 | 4/14 | 21.09.2016 | Observability   | "                     |                    |  |
| 40 | 5/12 | 22.09.2016 | Stability analysis in SSM, stability improvement by state feedback                    | "                     |                    |  |
| 41 | 5/12 | 22.09.2016 |   | "                     |                    |  |
| 42 | 5/12 | 23.09.2016 | Necessary and sufficient conditions for   | "                     |                    |  |
| 43 | 5/12 | 23.09.2016 | arbitrary pole placement.   | "                     |                    |  |
| 44 | 5/12 | 28.09.2016 | State regulator design and problems   | ,,                    |                    |  |
| 45 | 5/12 | 28.09.2016 | solving for the same  | ,,                    |                    |  |
| 46 | 5/12 | 29.09.2016 | State regulator design with integrator and  | ,,                    | Assignment         |  |
| 47 | 5/12 | 29.09.2016 | problems solving for the same   | "                     | -VI                |  |
| 48 | 5/12 | 03.10.2016 | State observer design and problems solving for the same                               | "                     |                    |  |
| 49 | 5/12 | 03.10.2016 | -   |                       |                    |  |
| 50 | 5/12 | 07.10.2016 | Concepts of P, PI, PID controllers  | Simulation<br>Chalk & |                    |  |
| 51 | 5/12 | 07.10.2016 |   | Talk                  |                    |  |
| 52 | 6/4  | 08.10.2016 | Introduction to nonlinear systems and   | Simulation            |                    |  |
| 53 | 6/4  | 08.10.2016 | behavior of non-linear systems  | Chalk &<br>Talk       |                    |  |
| 54 | 6/4  | 13.10.2016 | Common physical non-linearity –   | Chalk &               | 1                  |  |
| 55 | 6/4  | 13.10.2016 | saturation, friction, backlash, dead zone, relay, and multi variable non-linearity    | Talk                  | Assignment<br>-VII |  |
| 56 | 7/6  | 19.10.2016 | Concepts of phase plane method, singular points, stability of nonlinear system, limit | Simulation<br>Chalk & |                    |  |
| 57 | 7/6  | 19.10.2016 | cycles.   | Talk                  |                    |  |
| 58 | 7/6  | 20.10.2016 | Construction of phase plane by Iscoline   | Chalk &               | Assignment         |  |
| 59 | 7/6  | 20.10.2016 | method  | Talk                  | -VIII              |  |
| 60 | 7/6  | 21.10.2016 | Construction of phase plane by Delta  | ,,                    |                    |  |
| 61 | 7/6  | 21.10.2016 | method  | ,,                    | 1 1                |  |
| 62 | 8/6  | 02.11.2016 | Liapunov stability criteria, Liapunov   | ,,                    | 1                  |  |
| 63 | 8/6  | 02.11.2016 | function  | ,,                    | 1                  |  |
| 64 | 8/6  | 03.11.2016 | Hrwitz criterion and Liapunov's direct  | ,,                    | Assignment         |  |
| 65 | 8/6  | 03.11.2016 | method - linear systems stability analysis  | ,,                    | -IX                |  |

| 66 | 8/6 | 04.11.2016 | Construction of Liapunov functions for | "  |  |
|----|-----|------------|--|----|--|
| 67 | 8/6 | 04.11.2016 | nonlinear system by Krasvkii's method  | ,, |  |

Signature of HOD