



**P.B.SIDDHARTHA COLLEGE OF ARTS & SCIENCE: VIJAYAWADA – 520010**

**Teaching Plan 2010 – 11 Winter Semester**

**DEPARTMENT OF ELECTRONICS**

**TITLE: BASIC ELECTRONICS**

**Class Work Commences: / /2010**

**Last Instructional Day: / /2010**

**Class: I B.Sc (MECs)**

**Course Code: ELE 062**

**Lecturer: D.SRINIVASA REDDY**

| S.NO | SUBTOPICS                                   | DATE PROPOSED | COMPLETED DATE | ASSIGNMENT | SEMINAR |
|------|---|---------------|----------------|------------|---------|
| 1    | INTRODUCTION TO SEMICONDUCTOR DEVICES       |               |                |            |         |
| 2    | IDEAL DIODE                                 |               |                |            |         |
| 3    | SEMICONDUCTOR MATERIALS                     |               |                |            |         |
| 4    | ENERGY LEVELS                               |               |                |            |         |
| 5    | EXTRINSIC MATERIALS: N-TYPE & P-TYPE        |               |                |            |         |
| 6    | SEMICONDUCTOR DIODE                         |               |                |            |         |
| 7    | RESISTNACE LEVELS                           |               |                |            |         |
| 8    | DIODE EQUIVALENT CIRCUITS                   |               |                |            |         |
| 9    | DIODE SPECIFICATIONS SHEETS                 |               |                |            |         |
| 10   | TRANSISTION & DIFFUSION CAPACITANCE         |               |                |            |         |
| 11   | REVERSE RECOVERY TIME                       |               |                |            |         |
| 12   | SEMICONDUCTOR DIODE NOTATION                |               |                |            |         |
| 13   | DIODE TESTING                               |               |                |            |         |
| 14   | ZENER DIODES                                |               |                |            |         |
| 15   | INTRODUCTION TO DIODE APPLICATIONS          |               |                |            |         |
| 16   | LOAD LINE ANALYSIS                          |               |                |            |         |
| 17   | DIODE APPROXIMATIONS                        |               |                |            |         |
| 18   | SERIES DIODE CONFIGUARATIONS WITH DC-INPUTS |               |                |            |         |
| 19   | PARALLEL & SERIES-PARALLEL CONFIGURATIONS   |               |                |            |         |
| 20   | SINUSOIDAL INPUTS                           |               |                |            |         |

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|----|--|-----------------|--|--|--|
| 21 | HALF-WAVE<br>RECTIFICATION                       |                 |  |  |  |
| 22 | FULL-WAVE<br>RECTIFICATION                       |                 |  |  |  |
| 23 | CLIPPERS   |                 |  |  |  |
| 24 | CLAMPERS   |                 |  |  |  |
| 25 | ZENER-DIODES                                     |                 |  |  |  |
| 26 | VOLTAGE MULTIPLIER<br>CIRCUITS                   |                 |  |  |  |
| 27 | INTRODUCTION TO<br>BI-POLAR TRANSISTORS          |                 |  |  |  |
| 28 | TRANSISTOR<br>CONSTRUCTION                       |                 |  |  |  |
| 29 | TRANSISTOR<br>OPERATION                          |                 |  |  |  |
| 30 | TRANSISTOR<br>AMPLIFICATION ACTION               |                 |  |  |  |
| 31 | COMMON BASE<br>CONFIGURATION                     |                 |  |  |  |
| 32 | COMMON EMITTER<br>CONFIGURATION                  |                 |  |  |  |
| 33 | COMMON COLLECTOR<br>CONFIGURATION                |                 |  |  |  |
| 34 | LIMITS OF OPERATION                              |                 |  |  |  |
| 35 | TRANSISTOR<br>SPECIFICATION SHEET                |                 |  |  |  |
| 36 | TRANSISTOR TESTING                               |                 |  |  |  |
| 37 | TRANSISTOR CASING                                |                 |  |  |  |
| 38 | TRANSISTOR TERMINAL<br>IDENTIFICATION            |                 |  |  |  |
| 39 | INTRODUCTION TO D.C<br>BIASING BJTS              |                 |  |  |  |
| 40 | OPERATING POINT                                  |                 |  |  |  |
| 41 | FIXED BIAS CIRCUIT                               |                 |  |  |  |
| 42 | EMITTER STABILIZED<br>BIAS CIRCUIT               |                 |  |  |  |
| 43 | VOLTAGE DIVIDER<br>BIAS                          |                 |  |  |  |
| 44 | D.C BIAS WITH<br>VOLTAGE FEEDBACK                |                 |  |  |  |
| 45 | BIAS STABILIZATION                               |                 |  |  |  |
| 46 | PRACTICAL<br>APPLICATIONS                        |                 |  |  |  |
|    |  | 1st<br>INTERNAL |  |  |  |
| 47 | INTRODUCTION TO<br>SPECIAL ELECTRONIC<br>DEVICES |                 |  |  |  |
| 48 | LIGHT EMISSION                                   |                 |  |  |  |

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|----|---|--|--|--|--|
|    | DIODES(LED'S)                                   |  |  |  |  |
| 49 | SCHOTTKY BARRIER(hot-carrier) DIODES            |  |  |  |  |
| 50 | VARACTOR (varicap) DIODES                       |  |  |  |  |
| 51 | POWER DIODES                                    |  |  |  |  |
| 52 | TUNNEL DIODES                                   |  |  |  |  |
| 53 | PHOTO DIODES                                    |  |  |  |  |
| 54 | PHOTO CONDUCTIVE CELLS                          |  |  |  |  |
| 55 | IR – EMITTERS                                   |  |  |  |  |
| 56 | LIQUID CRYSTAL DISPLAYS                         |  |  |  |  |
| 57 | SOLAR CELLS & THERMISTORS                       |  |  |  |  |
| 58 | INTRODUCTION TO FIELD EFFECT TRANSISTORS(FET'S) |  |  |  |  |
| 59 | CONSTRUCTION AND CHARACTERISTICS OF JFETS       |  |  |  |  |
| 60 | TRANSFER CHARACTERISTICS                        |  |  |  |  |
| 61 | SPECIFICATION SHEETS(JFETs)                     |  |  |  |  |
| 62 | IMPORTANT RELATIONSHIPS                         |  |  |  |  |
| 63 | DEPLETION TYPE MOSFET                           |  |  |  |  |
| 64 | ENHANCEMENT TYPE MOSFET                         |  |  |  |  |
| 65 | MOSFET HANDLING                                 |  |  |  |  |
| 66 | INTRODUCTION TO FET BIASING                     |  |  |  |  |
| 67 | SELF BIAS CONFIGURATION                         |  |  |  |  |
| 68 | VOLTAGE DIVIDER BIASING                         |  |  |  |  |
| 69 | DEPLETION TYPE MOSFET                           |  |  |  |  |
| 70 | ENHANCEMENT TYPE MOSFET                         |  |  |  |  |
| 71 | INTRODUCTION TO pnpn AND OTHER DIVICES          |  |  |  |  |
| 72 | SILICON CONTROLLED RECTIFIER                    |  |  |  |  |
| 73 | BASIC SCR OPERATION                             |  |  |  |  |
| 74 | SCR CHARACTERISTICS AND RATINGS                 |  |  |  |  |

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|----|---|-----------------|--|--|--|
| 75 | SCR CONSTRUCTION                              |                 |  |  |  |
| 76 | TERMINAL IDENTIFICATION                       |                 |  |  |  |
| 77 | SCR APPLICATIONS<br>SILICON CONTROLLED SWITCH |                 |  |  |  |
| 78 | GATE TURN-OFF SWITCH                          |                 |  |  |  |
| 79 | LIGHT ACTIVATED SCR                           |                 |  |  |  |
| 80 | SHOCKLEY DIODE                                |                 |  |  |  |
| 81 | DIAC & TRIAC                                  |                 |  |  |  |
| 82 | UNI-JUNCTION TRANSISTOR(UJT)                  |                 |  |  |  |
| 83 | PHOTO TRANSISTORS                             |                 |  |  |  |
| 84 | OPTO ISOLATORS                                |                 |  |  |  |
|    |   | 2nd<br>INTERNAL |  |  |  |



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**Teaching Plan 2010 – 11 Monsoon Semester**

DEPARTMENT OF ELECTRONICS

**TITLE: MICROCONTROLLERS & EMBEDDED SYSTEMS**

**Class Work Commences:** / /2010

**Last Instructional Day:** / /2010

**Class:** III B.Sc (MECs)

**Course Code:** CSC 156

**Lecturer:** D.SRINIVASA REDDY

| S.NO | SUBTOPICS                                | DATE PROPOSED | COMPLETED DATE | ASSIGNMENT | SEMINAR |
|------|--|---------------|----------------|------------|---------|
| 1    | INTRODUCTION TO 8051 MICROCONTROLLERS    |               |                |            |         |
| 2    | MICROCONTROLLERS AND EMBEDDED PROCESSORS |               |                |            |         |
| 3    | 8051 MICROCONTROLLER HARDWARE            |               |                |            |         |
| 4    | I/O – PINS, PORTS AND CIRCUITS           |               |                |            |         |
| 5    | EXTERNAL MEMORY                          |               |                |            |         |
| 6    | MEMORY ORGANIZATION                      |               |                |            |         |
| 7    | COUNTERS AND TIMERS                      |               |                |            |         |
| 8    | SERIAL DATA – I/O                        |               |                |            |         |
| 9    | INTERRUPTS                               |               |                |            |         |
| 10   | INSTRUCTION SET                          |               |                |            |         |
| 11   | SIMPLE PROGRAMMING                       |               |                |            |         |
| 12   | INTRODUCTION TO EMBEDDED SYSTEMS         |               |                |            |         |
| 13   | CLASSIFICATION OF EMBEDDED SYSTEMS       |               |                |            |         |
| 14   | PROCESSOR IN THE SYSTEM                  |               |                |            |         |
| 15   | EMBEDDED PROCESSOR FOR A COMPLEX SYSTEM  |               |                |            |         |
| 16   | OTHER HARDWARE UNITS                     |               |                |            |         |
| 17   | DEVICES AND BUSSES FOR DEVICE NETWORKS   |               |                |            |         |
| 18   | I/O DEVICES                              |               |                |            |         |
| 19   | COMMUNICATION WITH SERIAL DEVICES        |               |                |            |         |