

Approved by AICTE, New Delhi & Affiliated to JNTUK, Kakinada

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| **BLOCK :**  | E BLOCK |
| **FLOOR :**  | THIRD FLOOR |
| **ROOM NO:**  | 305 |
| **ROOM SIZE (in Sq. mtrs):** | 66.6 |
| **LAB NAME:** | MICROWAVE & OPTICAL COMMUNICATIONS LAB |
| **FANS :**  | 6 |
| **TUBE LIGHTS :**  | 3 |
| **CHAIRS :**  | 4 |
| **STAFF TABLES :**  | 2 |
| **EXPERIMENT TABLES :**  | 12 |
| **CLOSED IRON RACKS :**  | 0 |
| **WOODEN CLOSED RACKS :** | 0 |
| **Others:** | OPENRACKS: 3, BERUVA:2, DUSTBIN:1, STABILIZER:1, WALL CLOCK:1, NOTICEBOARD:1, VISSION MISSION BOARDS:1, STOOLS:47, WHITE BOARD:1, CAMERA:1 |

**EQUIPMENT DETAILS**

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| **S.NO** | **EQUIPMENT PARTICULARS** | **QUANTITY** | **VENDOR** |
|
| 1 | DIGITAL CRO'S(DSO'S)(100MHZ) | 5 | MICRO TECHNOLOGY |
| 2 | ANALOG CRO'S | 8 | PROFESSIONAL ADVANCED ELECTRONICS |
| 3 | FUNCTION GENERATORS | 8 | PHYSITECH ELECTRONICS |
| 4 | RPS | 8 | PHYSITECH ELECTRONICS |
| 5 | STABILIZER(5KVA) | 1 | MONOTECH ENGINEERS |
| 6 | 4 BIT D/A CONVERTORS | 2 | SS. LAB EQUIPMENTS |
| 7 | PHASE LOCKED LOOP | 2 | SS. LAB EQUIPMENTS |
| 8 | DIFFERENTIATOR AND INTEGRATOR | 2 | SS. LAB EQUIPMENTS |
| 9 | VOLTAGE REGULATOR USING IC 723 | 2 | SS. LAB EQUIPMENTS |
| 10 | SCHMITT TRIGGER CIRCUITS USING IC 741 & 555 | **2** | SS. LAB EQUIPMENTS |
| 11 | ACTIVE FILTERS LPF,HPF | 2 | SS. LAB EQUIPMENTS |
| 12 | MONOSTABLE MULTIVIBRATOR USING IC 555 | 2 | SS. LAB EQUIPMENTS |
| 13 | ASTABLE MULTIVIBRATOR USING IC555 | 2 | SS. LAB EQUIPMENTS |
| 14 | OP AMP APPLICATIOS AS ADDER,SUBTRACTOR, COMPARATOR | 2 | SS. LAB EQUIPMENTS |
| 15 | FUNTION GENERATOR USING OPAMP | 2 | SS. LAB EQUIPMENTS |
| 16 | GUNN POWER SUPPLY | 2 | SS LAB EQUIPMENTS |
| 17 | REFLEX KLYSTRON POWER SUPPLY | 3 | SS LAB EQUIPMENTS |
| 18 | FIBER OPTIC LED CHARACTERISTICS | 1 | SS LAB EQUIPMENTS |
| 19 | LASER DIODE CHARACTERISTICS | 1 | SS LAB EQUIPMENTS |
| 20 | INTENSITY MODULATION OF LASER | 1 | SS LAB EQUIPMENTS |
| 21 | DIGITAL FIBER OPTIC LINK | 1 | SS LAB EQUIPMENTS |
| 22 | MEASUREMENT OF NUMERICAL APERTURE | 1 | SS LAB EQUIPMENTS |
| 23 | VOICE - ANALOG FOYER OTICAL LINK | 1 | SS LAB EQUIPMENTS |
| 24 | SLOTTED LINE | 5 | SS LAB EQUIPMENTS |
| 25 | DIRECTION COUPLER | 2 | SS LAB EQUIPMENTS |
| 26 | MAGIC TEE | 2 | SS LAB EQUIPMENTS |
| 27 | COOLING FANS | 3 | SS LAB EQUIPMENTS |
| 28 | MULTIMETERS | 2 | SS LAB EQUIPMENTS |
| 29 | PROBES | 15 | SS LAB EQUIPMENTS |
| 30 | MICROWAVE STANDS | 9 | SS LAB EQUIPMENTS |
| 31 | MATCHED TERMINATION | 4 | SS. LAB EQUIPMENTS |
| 32 | CIRCULATOR | 1 | SS. LAB EQUIPMENTS |

**LAB SPECIFICATIONS**

**LINEAR IC APPLIATIONS LAB (SEM 1)**

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| **S.NO** | **NAME OF THE EXPERIMENT** | **APPARATUS REQUIRED** | **AVAILABLE/NOT AVAILABLE** |
| 1 | OP AMP Applications – Adder, Subtractor, Comparator Circuits | TRAINER KIT | AVAILABLE |
| MULTIMETER | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 2 | Integrator and Differentiator Circuits using IC 741 | TRAINER KIT | AVAILABLE |
| FUNCTION GENERATOR | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 3 | Active Filter Applications – LPF, HPF (first order) | TRAINER KIT | AVAILABLE |
| FUNCTION GENERATOR | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 4 | Active Filter Applications – BPF, Band Reject (Wideband) and Notch Filters | TRAINER KIT | AVAILABLE |
| FUNCTION GENERATOR | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 5 | IC 741 Oscillator Circuits – Phase Shift and Wien Bridge Oscillators | BREAD BOARD | AVAILABLE |
| COMPONENTS | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 6 | Function Generator using OP AMPs | TRAINER KIT | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 7 | IC 555 Timer – Monostable Operation Circuit | TRAINER KIT | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 8 | IC 555 Timer – Astable Operation Circuit | TRAINER KIT | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 9 | Schmitt Trigger Circuits – using IC 741 and IC 555 | TRAINER KIT | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| FUNCTION GENERATOR | AVAILABLE |
| 10 | IC 565 – PLL Applications | TRAINER KIT | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 11 | IC 566 – VCO Applications | TRAINER KIT | AVAILABLE |
| PROBES | AVAILABLE |
| CRO | AVAILABLE |
| 12 | Voltage Regulator using IC 723 | TRAINER KIT | AVAILABLE |
| MULTIMETER | AVAILABLE |
| DRB | AVAILABLE |
| 13 | Three Terminal Voltage Regulators – 7805, 7809, 7912. | BREAD BOARD | AVAILABLE |
| MULTIMETER | AVAILABLE |
| 14 | study of op-amps-Ic 741,Ic555,Ic565,Ic 566 | THEORY | AVAILABLE |
| AVAILABLE |

**MICROWAVE ENGINEERING LAB (SEM 1)**

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| **S.NO** | **NAME OF THE EXPERIMENT** | **APPARATUS REQUIRED** | **AVAILABLE/NOT AVAILABLE** |
| 1 | Reflex Klystron Characteristics. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 2 | Gunn Diode Characteristics. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 3 |  Attenuation Measurement. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 4 |  Directional Coupler Characteristics. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 5 | VSWR Measurement. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 6 | Impedance and Frequency Measurement. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 7 | Waveguide parameters measurement. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 8 | Scattering parameters of Circulator. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 9 |  Scattering parameters of Magic Tee. | MICROWAVE BENCH | AVAILABLE |
| KLYSTRON POWER SUPPLY | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 10 | Characterization of LED. | TRAINER KIT | AVAILABLE |
| MULTIMETER | AVAILABLE |
| 11 |  Characterization of Laser Diode. | TRAINER KIT | AVAILABLE |
| MULTIMETER | AVAILABLE |
| 12 | Intensity modulation of Laser output through an optical fiber. | TRAINER KIT | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 13 | Measurement of Data rate for Digital Optical link. | TRAINER KIT | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |
| 14 |  Measurement of NA. | TRAINER KIT | AVAILABLE |
| FIBER OPTIC CABLE | AVAILABLE |
| 15 |  Measurement of losses for Analog Optical link. | TRAINER KIT | AVAILABLE |
| CRO | AVAILABLE |
| PROBES | AVAILABLE |