<table>
<tr><td>Course Code:</td><td>ECL 101</td><td>Course Title:</td><td colspan="4">Analog Electronics</td></tr>
<tr><td rowspan="2">Category:</td><td rowspan="2">Core</td><td rowspan="2">Credit Assigned</td><td>L</td><td>T</td><td>P</td><td>C</td></tr>
<tr><td>3</td><td>0</td><td>2</td><td>4</td></tr>
<tr><td>Pre-Requisite (if Any)</td><td>Nil</td><td>Type of Course</td><td colspan="4">Basic Science</td></tr>
<tr><td colspan="7">Course Outcomes:
1. This course introduces the fundamentals of semiconductor devices, such as diode, BJT, DIAC, LED, UJT etc.
2. To study the V-I characteristics, biasing, small signal analysis, etc. for various electronic devices.
3. The student will be able to apply various devices into electroniccircuits and can compute various parameters.
4. At the end student will be able to study and design various power devices including applications of these devices in to power amplifications.</td></tr>
<tr><td colspan="7">Course Contents:
P &N Type Semiconductors, Diodes and Power Supplies, Theory of P-N Junction Diode, Junction Capacitance,
Halfwave & Fullwave, Rectifiers, Filters, Ripple-Factor,
Characteristics & Applications of Following Diodes, Zener as Regulators, Schottkey, Photodiode, LED, LCD, Varactor Diode &Tunnel Diode
Junction Transistors Theory of Operation, Static Characteristics , Break Down Voltages, Current Voltage Power Limitations, Biasing of BJT Different Biasing Arrangements, Stability Factor, Thermal Runaway, Power Transistors
Small Signal Analysis & High Frequency Analysis of BJT CE, CB, CC Amplifiers and Comparison High Frequency Analysis Calculation of Frequency Response, Gain Bandwidth Product
Power Amplifiers Classification A, B, AB, C Classes, Efficiency, Push Pull Configuration, Complimentary Symmetry, Second Harmonic & Cross Over Distortion. Positive and Negative Feedback Amplifiers Classification, Practical Circuits, Applications, Advantages. Oscillators Stability, Barkhausen Criteria, RC, LC & Crystal Oscillators
Field Effect Transistor & MOSFET, Principle of Operation & Characteristic, Biasing Arrangement, Small Signal Analysis of CG, CD & CS, High Frequency</td></tr>
<tr><td colspan="7">Text:
1) Milman and Halkias, “Integrated Electronics”, Second Edition, 2011, McGraw Hill.
2) Boylestad and Nashelsky, “Electronic Devices & Circuit theory”,2011, Tenth Edition,</td></tr>
<tr><td colspan="7">Reference:
1) David A. Bell, “Electronic Devices and Circuits”
2) Milman and Halkias, “Electronic Devices and Circuits”, Second Edition, 2011, McGraw Hill.</td></tr>
<tr><td colspan="7">List of Lab Assignments / Experiments OR List of Tools on which the lab assignment should be based (If Any)
1)Study of characteristics PN-junction and Zenerdiodes
2) Study of PN-junction diode as full-wave and half wave rectifier
3) Study of Zener Diode as regulator
4) Input and output characteristics of NPN transistor under different configurations.</td></tr>
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