**LESSON PLAN**

**Name of Faculty : Revti Raman**

**Discipline : Electronics & Communication Engg.**

**Semester : 3rd**

**Subject : Electronic Devices & Circuits**

**Lesson Plan Duration : 16 weeks**

**Work load (Lecture /Practical) per week (in hours): Lectures—03, Practical—03**

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| Week |  | Theory | Practical | |
| Lecture Day | Topic (Including Assignment/ Test | Practical Day | Topic |
| 1st | 1 | Review of Amplifiers | 1 | Review of Lab/ Practicals. |
| 2 | Need for multistage amplifier & Gain of multistage amplifier |
| 3 | RC coupled multistage amplifier, its frequency response and bandwidth |
| 2nd | 4 | Transformer coupled Multistage Amplifier, its frequency response and bandwidth. | 2 | Plot the frequency response of two stage RC coupled amplifier and calculate the bandwidth and compare it with single stage amplifier. |
| 5 | Direct coupled multistage amplifier, its frequency response and bandwidth. |
| 6 | Difference between voltage and power amplifiers, Importance of impedance matching in amplifiers. |
| 3rd | 7 | Class A & Class B amplifiers, | 3 | To measure the gain of push-pull amplifier at 1 KHz. |
| 8 | Class AB and Class C amplifiers, collector Efficiency & Distortion in Class A, B, C amplifiers. |
| 9 | Single ended Power amplifiers, Graphical method of calculation (without derivation) of output power, heat dissipation curve and importance of heat sinks. |
| 4th | 10 | Push Pull Amplifier | 4 | Revision / File Assessment |
| 11 | Complementary Symmetry Push-Pull amplifier. |
| 12 | Assignment topic/Test/Quiz. |
| 5th | 13 | Basic principal and types of feedback, derivation of expression for gain of an amplifier employing feedback | 5 | To measure the voltage gain of emitter follower circuit and plot its frequency. |
| 14 | Effect of feedback (negative) on gain, stability, distortion and bandwidth of and amplifier. |
| 15 | RC coupled amplifier with emitter bypass capacitor. |
| 6th | 16 | Emitter follower amplifier and its application. | 6 | Revision |
| 17 | Assignment –Topic & Class work Checking |
| 18 | Expert lecture |
| 7th | 19 | Sessional Test | 7 | Plot the frequency response curve of Hartley and Colpitt’s Oscillator |
| 20 | Use of positive feedback, Bark-hausen criterion for oscillations. |
| 21 | Working principle of Tunned Collector Oscillator |
| 8th | 22 | Working principle of Hartley and Colpitt’s Oscillator Circuits. | 8 | Plot the frequency response curve of phase shift and Wein bridge Oscillator. |
| 23 | Working principle of Phase shift and wein- bridge Oscillator Circuits. |
| 24 | Working principle of crystal Oscillator Circuit. |
| 9th | 25 | Revision | 9 | Revision |
| 26 | Series and parallel resonant circuit and bandwidth of resonant circuits. |
| 27 | Single tuned voltage amplifier & its frequency response. |
| 10th | 28 | Double tuned voltage amplifier & its frequency response. | 10 | Use of IC 555 as monostable multivibrator and observe the output for different values |
| 29 | Expert Lecture |
| 30 | Working principle of transistor as switch. |
| 11th | 31 | Concept of multi-vibrator: a stable, mono-stable, and bistable and their applications. | 11 | Use of IC as a stable multivibrator and observe the output at different duty cycles. |
| 32 | Concept of multi-vibrator: a stable, mono-stable, and bistable and their applications. |
| 33 | Concept of multi-vibrator: a stable, mono-stable, and bistable and their applications. |
| 12th | 34 | Block diagram of IC555 and its working and applications. | 12 | Revision |
| 35 | IC555 as monostable and astable multi-vibrator and bistable multivibrator. |
| 36 | Assignment topic/sessional. |
| 13th | 37 | Characteristics of an ideal operational amplifier and its block diagram. | 13 | To use IC 741  (op-amp) as  1.Inverter  2. Adder  3.Subtractor  4.Integrator |
| 38 | IC-741 and its pin configuration |
| 39 | Definition of differential voltage gain, CMRR, PSRR, slew rate and input offset current. |
| 14th | 40 | Operational amplifier as an inverter, scale change, adder Subtractor, differentiator, and integrator. | 14 | To realize positive and negative fixed voltage DC power supply using three terminal voltage regulator IC (7805, 7812 |
| 41 | Operational amplifier as an inverter, scale change, adder Subtractor, differentiator, and integrator |
| 42 | Operational amplifier as an inverter, scale change, adder Subtractor, differentiator, and integrator. |
| 15th | 43 | Concept of DC power supply, line and load regulation | 15 | Prototype making/ practice |
| 44 | Concept of fixed voltage, IC regulators  9like 7805, 7905), and variable |
| 45 | Voltage regulator like (IC 723) |
| 16th | 46 | Revision/ seminar | 16 | Viva Voice |
| 47 | Revision/ Seminar |
| 48 | Sessional |