Semester	**III**
Course	**SEC**
Paper Code	**S2PH230311P**
Paper Title	**Experiments in Analog Electronics**
No. of Credits	**3**
Theory / Practical / Composite	**Practical**
Minimum No. of preparatory hours per week a student has to devote	3
Number of Modules	1
Syllabus	

Initiation

Handling of CRO & DSO

List of Experiments

1. Measurement of internal resistance of voltage source, conversion of voltmeter to ammeter and vice versa.
2. To study V-I characteristics and rectification of PN junction diode.
3. To study the Reverse characteristics of a Zener diode and its use as voltage regulator (load and line).
4. To study the input and output characteristics of a Bipolar Junction Transistor in CE configuration.
5. To design a CE transistor amplifier of a given gain (mid-gain) using voltage divider bias.
6. To design a Wien bridge oscillator for given frequency using an op-amp.
7. OPAMPS:
   . Port identification and Offset null adjustment
   a. To design an inverting amplifier using Op-amp for dc voltage of given gain
   b. To design non-inverting amplifier using Op-amp
   c. To study comparator and Schmitt Trigger using Op-amp
   d. To add multiple dc voltages using Op-amp in inverting and non-inverting mode
   e. To design a precision Differential amplifier of given I/O specification using Op-amp.
   f. To investigate the use of an op-amp as an Integrator.
   g. To investigate the use of an op-amp as a Differentiator.

Learning Outcomes	CO1 : To become convergent with electronic measuring equipments. CO2 : Generate understanding of a practical voltage source CO3 : Acquire in depth knowledge of using Diode, BJT and OPAMPS as circuit elements. CO4: Learn to fabricate amplifiers and oscillators using analog components.	
Reading/Reference Lists	**Reference Books:** 1. Basic Electronics: A text lab manual, P.B. Zbar, A.P. Malvino, M.A. Miller, 1994,Mc-Graw Hill. 2. OP-Amps and Linear Integrated Circuit, R. A. Gayakwad, 4th edition, 2000, Prentice Hall. 3. Electronic Principle, Albert Malvino, 2008, Tata Mc-Graw Hill. 4. Electronic Devices & circuit Theory, R.L. Boylestad& L.D. Nashelsky, 2009, Pearson	
Evaluation		**CA**: 48 **Attn**: 2
Paper Structure for Theory Semester Exam		