

Course: VSC
Electronics Practical in Computer Instrumentation

Semester: II	Credits: 2	Subject Code: BSVSCCSE22302	Lectures: 60
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Course Outcomes:

At the end of this course, the learner will be able to:

- CO1- Calculate the frequency and amplitude of the sine and square wave.
- CO2- Describe the characteristics of semiconductor devices.
- CO3- Demonstrate the working of OP-AMP, ADC and DAC, analyze and interpret the data for relating electronics to computer science.
- CO4 - Work effectively and responsibly as a team member to perform experiments, report writing, using modern tools and techniques.

The practical course consists of 8 experiments out of which one will be activity equivalent to two experimental sessions. Activity will carry 15% marks at internal and external semester examinations. Internal marks will be calculated in continuous assessment of each practical weekly based on viva.

Practical - Unit 1	30
<ul style="list-style-type: none"> ● Activity - Study of CRO ● Study of forward and Reverse biased characteristics of PN Junction Diode ● Study of Opto-coupler using photo sensor (its application as burglar alarm) ● Study of Half wave and Full wave rectifier ● Introduction to the virtual lab - Rectifier, diode 	

Practical - Unit 2	30
<ul style="list-style-type: none"> ● Build and test adder and subtractor circuits using OPAMP. ● Introduction to the virtual lab - Opamp as inverting ● To study temperature sensor LM35/AD 590 ● Study of PIR and TILT sensor with presentation and project ● Build and test 4-bit DAC using R-2R Ladder Network ● 3-bit Flash ADC using discrete components ● Hobby Project- equivalent to two practicals based on sensors to be continued in the second year. 	

Reference Books:

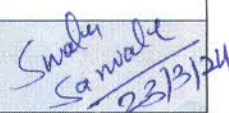
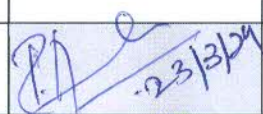
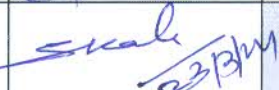
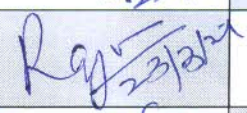
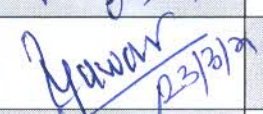
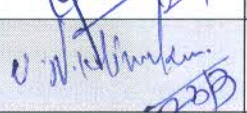

- A. Motorshed, *Electronic Devices and circuits*, Prentice Hall of India.
- Bolyestad, *Electronic Devices and Circuits*, Tata McGraw Hill.
- Prof A.D. Shaligram, *Sensors and Transducers*, PHI publication, 2nd Edition
- Ramakant Gaykwad *Op Amp and Linear Integrated Circuit*
- V.K. Mehta, *Principles of Electronics*, S. Chand and Co.



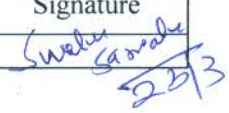
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Chairperson (HoD)	BSc(Comp. Sci.)	Swatee Sarwate	<i>Swatee Sarwate</i> 22/02/23

Websites:

- <https://electronicsforu.com/>
- <https://www.howstuffworks.com/>
- <https://www.instructables.com/>
- <https://nptel.ac.in/courses/122/106/122106025/>
- <https://nptel.ac.in/courses/117/103/117103063/>

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