

# Bidhan Chandra College, Rishra

## Department of Electronics



**Model Reference: University of Calcutta, Syllabus for Electronics (General)  
(Under CBCS)**

No.	Program Outcome	Description
<b>PO A</b>	<b>Subject Knowledge</b>	Fundamental knowledge of the subject will enable the students to consider applying the theoretical principles in practical areas so that they are likely to find themselves as professionals after having completion of the course.
<b>PO B</b>	<b>Technical Skill Development</b>	Students will have theoretical expertise, software knowledge and practical hands-on experiences which they can apply in their professional career in future or in further higher studies. Students also get conversant with different recent trends of scientific works happening in and around.
<b>PO C</b>	<b>Higher Study Foundation</b>	Students become highly cognizant of the expansion of the learning in their respective field which enables them to get admitted to the premier institutes of the country for higher studies.
<b>PO D</b>	<b>Research Orientation and Aptitude</b>	Encouraging the students to pursue research avenues related to the subject either in the academic or in the professional sphere that may lead to a vibrant knowledge. An aptitude to research is also stimulated in the minds of this budding generation which prompts them to implement some ideas in good laboratories of the country after completing the programme.
<b>PO E</b>	<b>Personality Development</b>	Imparting personality development skills to the students that are likely to help them in their professional and personal lives, thus making them responsible and sincere citizens.
<b>PO F</b>	<b>Spirit of Team Work</b>	Encouraging the students to coordinate with one another in a team environment and perform well as a team rather than trying to excel individually at the cost of group performance efficiency.

No.	Programme Specific Outcomes (PSO)
<b>PSO 1</b>	The students learn the fundamentals of Electronics, both theory and practice.
<b>PSO 2</b>	The students will appreciate the theoretical foundations related to different paradigms such as circuit theory, semiconductor devices, analog and digital electronics, microprocessor and microcontrollers, electronic communication and instrumentations etc.
<b>PSO 3</b>	The students learn the simulation of electronic circuits using software.
<b>PSO 4</b>	The students learn the techniques of professional communication practices such as in workshops, symposiums, conferences and seminars and in international platforms.
<b>PSO 5</b>	The students become effective and ethical practitioners contributing to social and national development.

## Course Outcomes (COs) of Graduation Degree Course of Electronics General (CBCS)

<b>Semester I</b>	
<b>Papers</b>	<b>Course Outcome</b>
Core Course (CC) - 1A Theory / Generic Elective - 1 Theory Course Code: ELT-G-CC-1-1-TH / ELT-A-GE-1-1-TH CourseName: Network Analysis and Analog Electronics	Students will learn the physical laws and theorems to analyze electrical circuits. Basic electronic devices like diodes, BJTs and FETs and amplifier circuits will be learnt.
Core Course (CC) - 1A Practical / Generic Elective - 1 Practical Course Code: ELT-G-CC-1-1-P / ELT-A-GE-1-1-P Course Name: Network Analysis and Analog Electronics Lab	Student will have hands-on experience on circuit design. They will also learn analysis of circuit parameters in view of scientific principles, so that it leads to synthesis of elements (passive and active) for innovative outcomes.
<b>Semester II</b>	
Core Course (CC) - 1B Theory / Generic Elective - 2 Theory Course Code: ELT-G-CC-2-2-TH / ELT-A-GE-2-2-TH Course Name: Linear and Digital Integrated Circuits	Analog electronic circuits using Operational amplifier and 555 timer will be learnt. Students will also learn design and application of combinational and sequential digital electronic circuits.
Core Course (CC) - 1B Practical / Generic Elective - 2 Practical Course Code: ELT-G-CC-2-2-P / ELT-A-GE-2-2-P Course Name: Linear and Digital Integrated Circuits Lab	Student will have hands-on experience on circuit design using OPAMP, 555 and digital ICs. They will also learn to simulate electrical and electronic circuits and devices using SPICE/MULTISIM simulators.
<b>Semester III</b>	
Core Course (CC) - 1C Theory / Generic Elective - 3 Theory Course Code: ELT-G-CC-3-3-TH / ELT-A-GE-3-3-TH Course Name: Communication Electronics	Students will learn principles and design of circuits of analog, pulse and digital electronic communication systems. Basic principles of satellite communication system will also be learnt.
Core Course (CC) - 1C Practical / Generic Elective - 3 Practical Course Code: ELT-G-CC-3-3-P / ELT-A-GE-3-3-P Course Name: Communication Electronics Lab	Student will have hands-on experience on circuit design and study analog, pulse and digital modulators, demodulators and different active/passive filters.
<b>Semester IV</b>	
Core Course (CC) - 1D Theory / Generic Elective - 4 Theory Course Code: ELT-G-CC-4-4-TH / ELT-A-GE-4-4-TH Course Name: Microprocessors and Microcontrollers	Students will be introduced with 8085 microprocessor and 8051 microcontroller systems. Architecture, interfacing, instructions and assembly language programming of both the 8085 and 8051 will be learnt.
Core Course (CC) - 1D Practical / Generic Elective - 4 Practical Course Code: ELT-G-CC-4-4-P / ELT-A-GE-1-1-P Course Name: Microprocessors and Microcontrollers Lab	Assembly language programming for 8085 $\mu$ P and 8051 $\mu$ -controller will be learnt and skills will be developed to run programs in appropriate trainer kits.
<b>Semester V</b>	
Discipline Specific Elective (DSE) - 1A DSE-1A: Group-A Option-1 (DSE-1A-1) Theory ELT-G-DSE-5-A-1-TH: Semiconductor Devices Fabrication	Understanding of the structure of semiconductor devices and their fabrication skills will be developed which will motivate the students to pursue research either in the academic or in the industries in future.
DSE-1A: Group-A Option-1 (DSE-A-1) Practical ELT-G-DSE-5-A-1-P: Semiconductor Devices Fabrication Lab	Methods for the fabrication and characterization of semiconductors/devices and ICs will be learnt which will encourage students to draw interest on VLSI techniques for future research.
<b>Semester VI</b>	
Discipline Specific Elective (DSE) - 1B DSE-1B: Group-B Option-1 (DSE-1B-1) Theory ELT-G-DSE-6-B-1-TH:	Students will learn about electronic instrumentation and bio-medical instrumentations as outcome.

Electronic Instrumentation	
DSE-1B: Group-B Option-1 (DSE-1B-1) Practical ELT-G-DSE-6-B-1-P: Electronic Instrumentation Lab	Students will learn how to measure different physical/electrical circuit parameters using different electronic instruments and their mechanism for measurements. They will also learn how to analyze signals from biomedical instruments viz. ECG machines etc.
<b>Skill Enhancement Course (SEC) - A SEC-A:</b> Group-A Option-1 (SEC-A-1) ELT-G-SEC-3/5-A-1-TH: Computational Physics	Computational skill and analytical knowledge for solving physical problems of the students will be enhanced. Students will learn programming structure and FORTRAN language and useful computational software like LaTeX, Gnuplot etc. as outcome.
<b>Skill Enhancement Course (SEC) - B SEC-B:</b> Group-B Option-1 (SEC-B-1) ELT-G-SEC-4/6-B-1-TH: Electrical Circuits and Network Skill	Technical skill on electrical circuits and principles will be enhanced. In-depth knowledge on practical electrical networks will develop skill and confidence in the area.