

**CHOUKSEY ENGINEERING COLLEGE**  
**DEPARTEMENT OF ELECTRICAL & ELECTRONICS ENGINEERING**  
**B.Tech Sixth Semester**

<b>Subject Name- Power Electronics</b>	<b>Subject Code- C025611(025)</b>
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1. To gain knowledge of various application of semiconductor switches by understanding their static and dynamic characteristics.
2. To understand the performance characteristics of controlled AC-DC converters for R, RL & RLE loads.
3. To gain knowledge on basic DC-DC converters and their operation under continuous /discontinuous mode of conduction for RLE loads.
4. To identify and formulate the requirements for four quadrant operation of DC motor.
5. To differentiate and understand the significance of various commutation circuits and their consequence on device stress.
6. To understand the principle of DC-AC conversion and the different topology for three phase to three phase and single phase to single phase DC-AC conversion.

<b>Subject Name- Electrical Power System -II</b>	<b>Subject Code- C025612(025)</b>
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1. Student should be able to make a one line representation of Power System.
2. Student should be able to evaluate fault currents for different faults at different locations in Power System.
3. Students should be able to identify cases of stable and unstable Power Systems.

<b>Subject Name- Digital signal Processing</b>	<b>Subject Code- C025613(025)</b>
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1. Design digital IIR filters by designing prototypical analog filters and then applying analog to digital conversion techniques such as the bilinear transformation.
2. Design digital FIR filters using the window method.
3. Use a computer to design digital filters via the frequency sampling approach and the Remez exchange Algorithm.
4. Implement digital filters in a variety of forms: direct form I and II, parallel, and cascade, and then analyze their sensitivity to finite precision effects such as input quantization, coefficient quantization, and multiplication round-off.
5. Analyze signals using the discrete Fourier transform (DFT).
6. Understand circular convolution, its relationship to linear convolution.

**Subject Name- Power Electronics lab****Subject Code- C025621(025)**

1. Learn about the different uses for semiconductor switches by comprehending their dynamic and static properties.
2. Comprehend the regulated AC-DC converters' performance features for R, RL, and RLE loads.
3. Learn about fundamental DC-DC converters and how they work for RLE loads in both continuous and discontinuous modes of conduction.
4. Determine and create the specifications needed for a DC motor operating in all four quadrants.
5. Distinguish between and comprehend the importance of different commutation circuits and how they affect device stress.
6. Comprehend the basic ideas behind DC-AC conversion as well as the many topologies involved in single-phase to single-phase and three-phase to three-phase conversions.
7. Acquire knowledge about fundamental concepts and techniques of Cycloconverter.
8. Acquire knowledge about fundamental concepts and techniques of Voltage controller.

**Subject Name- Electrical Power System II lab****Subject Code- C025622(025)**

1. Summarize the Power System in one sentence.
2. Calculate fault currents for various faults at various Power System locations.
3. Distinguish between stable and unstable power systems.
4. Analyze 1-Phase and 3-Phase transformers circuits.
5. Analyse sequence reactance of various power system element.

**Subject Name- Computer Simulation lab****Subject Code- C025623(025)**

1. Understand the different types of controllers and filters.
2. Create appropriate mathematical models for a particular problem's analysis, such as fault analysis or load flow studies.
3. Analyze the various types of power system faults and transmission line parameter.
4. Comprehend the power system stability analysis and load dispatch.
5. Understand rectifiers, choppers, synchronous machines and V curve.

**Subject Name- Digital Signal Processing lab****Subject Code- C025624(025)**

1. Create digital IIR filters by first creating analog filters that are considered the standard, and then use analog to digital conversion methods such the bilinear transformation.
2. Create digital FIR filters by applying the window approach.
3. Use the Remez exchange algorithm and frequency sampling technique to create digital filters on a computer.
4. Use a range of digital filter implementations, including cascade, parallel, and direct form I and II. Then, examine how sensitive these filters are to finite precision effects like input and coefficient quantization and multiplication round-off.

## Professional Elective II

<b>Subject Name- Communication System</b>	<b>Subject Code- C025631(025)</b>
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1. Understand amplitude modulation method and it's working.
2. Understand angle modulation technique viz. FM and PM.
3. Understand pulse modulation technique and their advantages.
4. Understand digital modulation technique and their advantages over analog modulation techniques.
5. Understand the basics of information theory and coding scheme used in communication.

<b>Subject Name- Distributed Generation</b>	<b>Subject Code- C025632(025)</b>
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1. After studying the subject students will be able to visualize the working principles and design aspects of various renewable energy sources and their interconnection.

<b>Subject Name- Testing &amp; Commissioning of Electrical Equipments</b>	<b>Subject Code- C025633(025)</b>
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1. After studying the subject students will be able to understand the common problems arising while commissioning of electric equipments.
2. They will also be able to learn about the routine tests to be performed and maintenance measures for various equipments.

<b>Subject Name- Simulation &amp; Programming</b>	<b>Subject Code- C025634(025)</b>
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1. After studying the subject students will be able to understand the basic programming in C++ and MATLAB.
2. They will also be able to solve various engineering problems through Programming and Simulation through these software.

<b>Subject Name- Medical Electronics</b>	<b>Subject Code- C025635(025)</b>
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1. To provide an acquaintance of the physiology of the heart, lung, blood circulation and circulation respiration.
2. To make the students understand the various sensing and measurement devices of electrical origin.
3. To provide the latest ideas on devices of non-electrical devices.
4. To bring out the important and modern methods of imaging techniques.
5. To provide latest knowledge of medical assistance / techniques and therapeutic equipments.

## Open Elective I

<b>Subject Name- Electrical Estimation and Costing</b>	<b>Subject Code- C000625(025)</b>
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1. Explain general principles of estimation & residential building electrification .
2. Preparation of detailed estimates and costing of residential and commercial installation.
3. Design and estimate of overhead transmission & distribution lines, Substations.

<b>Subject Name- Energy Auditing and Management</b>	<b>Subject Code- C000626(025)</b>
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1. Ability to understand the basics of Energy audit process.