



Savitribai Phule Shikshan Prasarak Mandal's
SKN SINHGAD COLLEGE OF ENGINEERING

(Approved by AICTE & Affiliated to Solapur University, Solapur.)
At Post- Korti, Taluka-Pandharpur, District-Solapur, Pin-413304
Phone: 02186-250146, Fax: 02186-245195

Email: principal.sknscoe@spspm.org / infosknscoe@spspm.org Website: www.spspm.org

Department of Electrical Engineering

Class: S,Y BTech.

SEM:I

1. Subject: Engineering Mathematics III

Course Outcomes:

- Student can solve problems of linear differential equation.
- Students can apply Laplace transform to solve problems of electrical fields.
- Student can apply Z transform under different conditions and can derive equation from them.
- Student can able to understand Fourier series.
- Student can analyze the functions of complex variable.

2. Subject: ELECTRICAL MACHINES – I

Course Outcomes:

Upon successful completion of this course,:

- Student will be able to analyze performance of DC generators and motors
- Student will be able to examine performance of single phase and three phase transformer
- Students will be able to identify applications of DC machines & transformer in power sector

3. Subject: ELECTRICAL MEASUREMENT AND INSTRUMENTATION

Course Outcomes:

- The students will be able to use Analog instruments in practical applications
- The students will be able to apply potentiometer & bridges for measurements of resistance, Inductance & capacitance
- The students will be able to find the applications of instrument transformer and data acquisition system for sensing & control of electrical quantities
- The students will be able to use digital instruments for various measurements.



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4. Subject: POWER SYSTEM-I

Course Outcomes:

After successful completion of this course,

- Student will be able to understand operation of different power plants
- Student will be able to analyze economic aspects of power system
- Student will be able to investigate need and areas of application for non-conventional energy sources
- Students will be able to understand overhead structure of power system.

5. Subject: ELECTRONIC DEVICES & CIRCUITS

Course Outcomes:

- Students will be able to design transistorized circuits based on their conceptual and analytical understanding of BJT
- Students will be able to analyze FET circuits
- Students will be able to analyze the Power amplifiers, feedback amplifiers, oscillator's concepts
- Students will be able to design unregulated power supplies for practical applications

6. Subject: OBJECT ORIENTED PROGRAMMING WITH C++

Course Outcomes:

After learning the course

- Students will be able to read, understand and analyze simple C++ program
- Students will be able to apply principle of OOP concept and explore their skill to develop Complex C++ program
- Students will be able to write the simple object oriented programs in C++ using objects and classes
- Students will be able to develop the applications using object oriented programming with C++

Class: S,Y BTech.

SEM:II

7. Subject: Numerical Methods and Linear Algebra

Course Outcomes:

- Student can solve numerical problems on to find roots of algebraic and transcendental equations



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- Student will demonstrate understanding and implementation of numerical solution algorithms
- Student will be able to solve differential equations and eigen value problems numerically
- Student will demonstrate an ability to identify, formulate and solve electrical Problems using matrix method

8. Subject: ELECTRICAL MACHINES – II

Course Outcomes:

After Successful completion of this course-

- Students will be able to analyze performance of three phase as well as single phase Induction Motors
- Students will be able to identify applications of Induction Motors in industries & power sector
- Students will be able to analyze performance of synchronous machines
- Students will be able to identify applications of synchronous machines in industries & power sector

9. Subject: POWER SYSTEM-II

Course Outcomes:

- Students will be able to understand overall structure of power system
- Students will be able to understand mechanical design of transmission lines
- Students will be able to implement the knowledge to design underground power distribution system
- Students will be able to analyze various performance parameters of transmission lines

10. Subject: ANALOG AND DIGITAL INTEGRATED CIRCUITS

Course Outcomes:

After successful completion of this course-

- Students will be able to analyze the differential amplifier circuit
- Students will be able to define specification and parameters of Op-amp
- Students will be able to analyze open loop as well as closed loop circuit configurations of operational amplifier
- Students will be able to design the combinational as well as sequential logic circuits



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11. Subject: NETWORK ANALYSIS

Course Outcomes:

Upon successful completion of this course, the students will be able to:

- Develop strong basics for network theory
- Develop the problem solving technique for networks by application of theorems
- Understand the behavior of the network by analyzing its transient response
- Apply knowledge of Network theory for analysis of 2-port networks

12. Subject: Computer Aided Design and Simulation

Course Outcomes:

After successful completion of this course student will be able to

- Create Design of various devices used in electrical engineering.
- Handle design software for different applications in electrical engineering.
- Understand steady state analysis of various electrical devices through simulation.
- Handle Simulation software for different applications in electrical engineering.



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Department of Electrical Engineering

Class: T,Y BTech.

SEM:I

1. Subject: POWER SYSTEM-III

Course Outcomes:

Course Outcomes: On completion of the course, learner will be able to-

- Draw a single line diagram of a given power system network.
- Evaluate the required circuit breaker rating under different fault conditions.
- Analyze power flow equation for the solution of different load flow problem.
- Analyze the steady state and transient stability of a power system using analytical methods.

2. Subject: Linear Control System

Course Outcomes:

Course Outcomes: On completion of the course, learner will be able to-

- Explain basic terminologies and applications of control systems.
- Derive mathematical model and determine the transfer function of a given control system through various techniques.
- Compute the time response and stability the given system.
- Analyze the given control system in time and frequency domain.

3. Subject: Microprocessor and Microcontroller

Course Outcomes:

Course Outcomes: On completion of the course, learner will be able to-

- Understand the architecture and addressing modes of 8085.
- Understand the architecture and addressing modes of 8051.
- Develop the assembly language programs of 8051.



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- Create the memory and I/O interfacing techniques with 8051.
- Develop the assembly language program in microcontroller 8051 for various applications in Electrical Engineering.

4. Subject: Electromagnetic Engineering

Course Outcomes:

- Student can solve numerical problems on different coordinate systems, divergence, curl and gradient.
- Student can derive basic laws of electrostatics and magneto statics and can apply them for different fields.
- Students can analyze boundary conditions for conductors and dielectric.
- Student can derive Maxwell's equations under different conditions

5. Subject: MANAGERIAL ECONOMICS

Course Outcomes:

At the end course student will be able to

- Elaborate the concepts of managerial economics
- Analyze the issues related to demand, supply and market
- Use different tools for demand analysis and forecasting
- Analyze the production and cost functions
- Decide price on the basis of market, demand and supply

6. Subject: Electrical Workshop

Course Outcomes:

At the end of the course student is able to grasp the applications of workshop equipment, wiring accessories and printed circuit boards and their importance in the practical field



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Class: T,Y BTech.

SEM:II

7. Subject: Electrical Machines Design

Course Outcomes:

Upon successful completion of this course:

- Student will get a basic knowledge to design a transformer.
- Student will get a basic knowledge to design a DC Machine.
- Student will get a basic knowledge to design a three phase Induction motor.
- Student will get a basic knowledge to design a Synchronous machine.

8. Subject: ELECTRICAL MACHINES – II

Course Outcomes:

After Successful completion of this course-

- Students will be able to analyze performance of three phase as well as single phase Induction Motors
- Students will be able to identify applications of Induction Motors in industries & power sector
- Students will be able to analyze performance of synchronous machines
- Students will be able to identify applications of synchronous machines in industries & power sector

9. Subject: Electrical Utilization

Course Outcomes:

- Students will be able to design a suitable scheme of speed control for the traction systems.
- Students will be able to understand different controlling methods, transition methods in traction.
- Students will be able to identify a heating/ welding scheme for a given application.
- Students will be able to identify/ Trouble shoot various lamps and fittings in use.
- Students will be able to understand the importance of maximizing the energy efficiency by its optimum utilization and mould their practical work in professional world accordingly



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10. Subject: Power Electronics

Course Outcomes:

Upon successful completion of this course, a student should be able to:

- Understand the fundamental principles and applications of power electronics circuits
- Solve problems and design switching regulators according to specifications.
- Use Computer-aided techniques for the design of power converter circuits.
- Appreciate the latest developments in power electronics.
- Assimilate new technological and development in related field

11. Subject: Signals & Systems

Course Outcomes:

At the end of the course student is able to –

- Identify basic signals, mathematically and graphically represent, transform and classify CT and DT signals
- Classify different systems and state their properties.
- Analyze LTI systems in the time domain using convolution and investigate their properties using Impulse response.
- Use Fourier and Z Transform for analyzing systems in frequency domain and use their properties.
- Compute DFT and FFT of DT sequences.

12. Subject: Advanced Control System

Course Outcomes:

After successful completion of this course student will be able to

- Students will be able to design the controller in time and frequency domain.
- Students will be able to examine and design the control system in modern approach.
- Students will be able to analyze the nonlinear control systems.
- Students will be able to analyze the Discrete Time Control Systems.



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13. Subject: Module - II – Electrical Safety

Course Outcomes:

After successful completion of this course student will be able to

- Students will get acquainted with Electrical safety

14. Subject: Mini Hardware Project

Course Outcomes:

After successful completion of this course student will be able to

- Understand, plan and execute a mini project with team.
- Device electronic hardware by implementing knowledge of PCB design techniques, soldering techniques and hardware debugging techniques
- Prepare technical report based on the mini project
- Estimate cost of the mini project, deliver technical seminar over mini project.



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Class: BE.BTech.

SEM:I

1. Subject: INDUSTRIAL DRIVES & CONTROL

Course Outcomes:

Course Outcomes: Students' will be able to:

- Technical expertise of electrical machines & drives
- Apply the knowledge to practical industrial systems
- Self-learning new technology of electrical drives
- Analyze and solve numerical problems on electrical drives.
- Write technical reports & give presentation on industrial drive systems.
- Describe the modern electric machines, drives, power converters, and control circuits for Specific application.

2. Subject: POWER SYSTEM AND OPERATION CONTROL

Course Outcomes:

On completion of the course, learner will be able to-

- Student will able to familiar with real and reactive power control

3. Subject: RENEWABLE ENERGY SOURCES

Course Outcomes:

On completion of the course, learner will be able to-

- To become familiar with the renewable energy sources and their applications to power generation.

4. Subject: SWITCHGEAR & PROTECTION

Course Outcomes:



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- Students will be able to know operating principles of different relays used for protection.
- Student will be able to get the in-depth understanding of how the major equipment's used in the power system are being protected against faults and abnormal conditions

5. Subject: ENERGY AUDIT AND MANAGEMENT

Course Outcomes:

At the end course student will be able to

- Analyze and understand energy consumption patterns and environmental impacts and mitigation method.
- Listing various energy conservation measures for various processes.
- Students can carry out preliminary audits.
- Can work out economic feasibility of encon option

Class: BE. BTech.

SEM:II

6. Subject: POWER QUALITY & FACTS

Course Outcomes:

Upon successful completion of this course:

- Student will be able to get the in-depth understanding of power quality issues & standards.
- Students will be able to understand working of power quality improving Equipment's.
- Student will able to understand series compensator devices
- Student will able to understand various method of improving real and reactive power

7. Subject: EXTRA HIGH VOLTAGE AC TRANSMISSION

Course Outcomes:

After Successful completion of this course-



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- Student will able to analyze the EHVAC system.
- Student will able to maintain/ Trouble shoot lightning arrester issues.
- Student will able to design EHVAC Lines

8. Subject: POWER SYSTEM PLANNING

Course Outcomes:

- Explain the need of power system expansion.
- Analyze the given power system for determining optimal values of decision variables.
- Apply mathematical tools to solve multi-objective optimization problems in expansion planning and reliability studies
- Power System Planning and Reliability

9. Subject: ELECTRICAL INSTALLATION AND ESTIMATION

Course Outcomes:

Upon successful completion of this course, a student should be able to:

- Student able to learn the testing and maintenance of various electrical equipment's
- Student should take due care in the installation of electrical equipment's,
- Student should take due care while observing IE rules.
- To make student can perform various test.