

SEM I

PCC-CE0231: Engineering Mathematics III

- 1 Make use of Linear Differential Equations to solve the civil engineering problems.
- 2 Apply knowledge of vector differentiation to find directional derivatives, curl and divergence of vector fields
- 3 Describe the statistical data numerically by using Lines of regression and Curve fittings
- 4 Solve basic problems in probability theory, including problems involving the Binomial, Poisson, and Normal distributions
- 5 Find Laplace transforms of given functions and use it to solve linear differential equations
- 6 Apply Numerical Integration.

PCC-CE0232: Building Construction

- 1 Explain the properties and suitability of various building materials.
- 2 Describe the functional requirement of building and its components.
- 3 Explain the types of masonry and identify the various bonds.
- 4 Classify the doors and windows and draw schematic sketches.
- 5 Explain the types of stair case. 6 Explain different types of roof coverings & types of flooring.

PCC-CE0233: Strength of Materials

- 1 Explain the basic concepts of the stresses and strains for different materials and Identify the response of elastic body for external actions
- 2 Analyze the trusses.
- 3 Draw SFD and BMD for determinate beams.
- 4 Calculate the bending and shear stress of beam

MDM-CE0235: Multi-disciplinary Minor- 01 (Building Construction)

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OE-CE0236: Open Elective- 01 (Building Construction and Planning)

- 1 Grasp the principles of planning, building bye laws to apply in the planning of residential/public buildings in relation to functional planning.
- 2 Classify the various components and their relationships in buildings and identify the materials and building services to be adopted for different buildings

HSSM-CE0237: Universal Human Values

- 1 Articulate the core principles of universal human values and their relevance to personal and professional life.
- 2 Analyze and reflect on ethical dilemmas and societal issues using a values-based framework
- . 3 Apply universal human values to decision-making processes in technical and professional settings.
- 4 Demonstrate the ability to foster and maintain respectful and empathetic relationships in diverse environments.
- 5 Evaluate the impact of technological advancements on human values and ethical standards.
- 6 Develop strategies to incorporate universal values into leadership and teamwork within professional settings.

HSSM-CE0239: Economics for Engineers

- 1 Explain fundamental economic principles and their relevance to engineering.
- 2 Conduct cost-benefit analysis and assess the economic feasibility of engineering solutions.
- 3 Analyze the impact of economic factors on engineering project decisions and societal outcomes.
- 4 Analyze different market structures and assess their impact on pricing strategies and competition within engineering sectors.

5 Conduct project feasibility analysis using financial appraisal methods like NPV, IRR, and payback period.

6 Evaluate the financial and economic sustainability of engineering solutions with respect to resource allocation, environmental impact, and societal needs.

SEM II

PCC-CE0241: Surveying

1 Apply basic principles of surveying through surveying equipment.

2 Explain the concepts of geodetic surveying and photogrammetry

3 Explain applications of RS, GIS and GPS

4 Apply surveying knowledge for curve setting

PCC-CE0242: Structural Mechanics

1 Explain stress, strain and torsion effect on bodies.

2 Analyze the circular shaft for torsion and bending

3 Analyze the buckling effect on columns

4 Analyze the beams for slope & deflection

5 Apply the fundamental concepts of direct & bending stresses.

PCC-CE0243: Fluid Mechanics

1 Explain the fluid properties and hydrostatic pressure force at various locations in a fluid.

2 Apply the principles of statics and kinematics of flow in solving problems of fluid mechanics.

3 Apply the Bernoulli's equation to solve the problems of fluid mechanics.

4 Explain laminar flow, turbulent flow and identify the losses in pipes

5 Identify the most efficient, economic open channel section and illustrate mathematical relationships for hydraulic jumps, critical flow, uniform flow, gradually varied flow.

6 Explain impact of jet on vanes.

MDM-CE0244: Multi-disciplinary Minor –02 Waste Management

- 1 Explain collection and characteristics of wastewater and solid waste
- 2 Explain treatment/processing/control technologies for prevention of pollution associated with wastewater and solid waste.
- 3 Explain technologies for biomedical, e waste and plastic waste management.

OE-CE0245: Open Elective -02 Municipal Solid Waste Management

- CO1 Determine solid waste properties for municipal solid waste.
- CO2 Select suitable processing technique for solid waste management.
- CO3 Analyze collection routes to enhance the efficiency of solid waste collection services.
- CO4 Select processing technique to enhance the efficiency and effectiveness of solid waste management systems.

HSSM -CE0246: Strategic Management

- 1 Explain the fundamentals of strategic management and its importance in civil engineering projects.
- 2 Explain the internal and external environments affecting civil engineering organizations using strategic tools.
- 3 Explain effective strategies for project management.
- 4 Explain strategic planning techniques to real-world civil engineering problems.
- 5 Discuss the role of leadership and organizational culture in strategy implementation.
- 6 Evaluate case studies to identify best practices in strategic management within the civil engineering sector.

HSSM -CE0247: Professional Ethics

- 1 Apply analytical techniques to enhance self awareness of personality types.
- 2 Utilize ethical decision making principle to cope with complex dilemma.
- 3 Implement professional work ethics to achieve excellence in practice.
- 4 Analyze positive interpersonal skills through effective collaboration strategies.

VEC-CE02410: Building Planning and Design

- 1 Describe Building Bye-Laws and regulations.
- 2 Plan and draw residential building considering principle of planning and Building Bye- Laws and regulations.
- 3 Describe the building systems such as plumbing, electrification.
- 4 Illustrate the concept of ventilation, air conditioning, acoustics and safety. 5 Describe different types of building finishes.

BSC-CE02411: Environmental Science (Decided by University)

- 1 Understand the importance of Environmental Studies and recognize significance of ecosystem.
- 2 Classify the values of natural resources with associated problems for sustainable lifestyles.
- 3 Describe the social and global environmental issues
- 4 Make aware of Pollution issues with its mitigation measures.
- 5 Familiarize the basics of Biodiversity and concerned issues in the context of Western Ghats.
- 6 Acquaint with the role of environmental laws and regulations in conservation efforts.