

## **M.E. Environmental Engineering**

### **PROGRAMME EDUCATIONAL OBJECTIVES**

PEO 1: Graduates will have sound knowledge to identify and formulate challenging Environmental Engineering problems and apply appropriate research methodologies and use modern engineering tools to provide technical solutions that are economically feasible and sustainable.

PEO 2: Graduates will possess analytical and lateral thinking ability to engage in lifelong learning for professional advancement to cope up with the rapidly evolving Environmental Engineering profession which is multi-disciplinary.

PEO 3: Graduates will become socially responsible and will possess abilities to communicate effectively and work efficiently and accept leadership roles in their profession, public services and community.

### **PROGRAMME OUTCOMES**

PO1: Acquire in-depth knowledge in Environmental Engineering, including wider and global perspective, with an ability to discriminate, evaluate, analyze and synthesize existing and new knowledge, and integration of the same.

PO2: Analyze complex Environmental Engineering problems thinking critically, apply independent judgment for synthesizing information to make intellectual and/or creative advances for conducting research in a wider theoretical, practical and policy context.

PO3: Think laterally and originally, conceptualize and solve Environmental Engineering problems, evaluate a wide range of potential solutions for those problems and arrive at feasible, optimal solutions after considering public health and safety, cultural, societal and environmental factors.

PO4: Extract information pertinent to unfamiliar problems through Research - literature survey and experiments, apply appropriate research methodologies, techniques and tools, design, conduct experiments, analyze and interpret data, demonstrate higher order skill and view things in a broader perspective, contribute individually/in group(s) to the development of scientific/technological knowledge in Environmental Engineering.

PO5: Create, select, learn and apply appropriate techniques, use modern resources and 5 modern engineering and IT tools, including tools for prediction and modeling, to complex Environmental Engineering activities with an understanding of their limitations.

PO6: Possess knowledge and understanding of group dynamics, Collaborate and recognize opportunities and contribute positively to Multidisciplinary scientific research, demonstrate a capacity for self-management and teamwork, decision-making based on open-mindedness, objectivity and rational analysis in order to achieve common goals and further the learning of themselves as well as others.

PO7: Demonstrate knowledge and understanding of Engineering Project Management and management principles and apply the same.

## **M.E. Water Resources Engineering**

### **PROGRAMME EDUCATIONAL OBJECTIVES**

PEO 1: Graduates will have sound knowledge to identify and formulate challenging Water Resources Engineering problems and apply appropriate research methodologies and use modern engineering tools to provide technical solutions that are economically feasible and sustainable.

PEO 2: Graduates will possess analytical and lateral thinking ability to engage in lifelong learning for professional advancement to cope up with the rapidly evolving Water Resource Engineering profession which is multi-disciplinary.

PEO 3: Graduates will become socially responsible and will possess abilities to communicate effectively and work efficiently and accept leadership roles in their profession, public services and community.

### **PROGRAMME OUTCOMES**

PO1: Understand the application of fluid mechanics, model studies and computational methods in solving a host of problems in hydraulic engineering.

PO2: Study types and classes of hydrologic simulation models and design procedures for safe and effective passage of flood flows for design of hydraulic structures.

PO3: Enable the students to understand the basic aquifer parameters and groundwater resources for different hydro-geological boundary conditions.

PO4: Apply systems concept, advanced optimization techniques to cover the sociotechnical aspects in the field of water resources.

PO5: Apply the principles and applications of remote sensing, GPS and GIS in the context to hydrological extreme flood and drought events in water resources engineering.

PO6: Design and construct water resource system components for processes to meet desired needs within realistic constraints such as environmental, socio-economical, water governance, political, ethical, health and safety, and sustainability.

PO7: Understand the impact of water and water related issues in a global, economic, environmental, and societal context.

PO8: Choose and use Research methodologies, Integrated Water Resources Management and gender relations and roles, legal aspects as it applies to the field of Water Resources Management.

PO9: Use the techniques, skills, and modern modelling software tools necessary for water resource planning and management.

PO10: Understand the impact of engineering solutions to water management problems and also will be aware of contemporary issues.

