SWAMI VIVEKANAND SUBHARTI UNIVERSITY, MEERUT

SUBHARTI INSTITUTE OF ENGINEERING & TECHNOLOGY

DEPARTMENT OF ENVIRONMENTAL ENGINEERING

[EVEN-ODD SEMESTER]

PO1- An ability to apply the knowledge of mathematics, science, and engineering fundamental to the solution of environmental problems.

PO2- Apply advanced level knowledge, techniques, skills and modern tools in the field of environmental engineering.

PO3- Distinguish the different energy generation systems and their environment impacts.

PO4- Understand the importance of energy efficiency and formulate energy conservation strategy for sustainable environment.

PO5- Identify major factors that would effect the atmosphere and climate change.

PO6- Recognise the need to engage in lifelong learning through continuing education and research

PO7- Manage project related to energy and environment in multidisciplinary environments.

PO8- An ability to assess safety and legal issues and the consequent responsibilities relevant to the professional.

PO-9 Develop environmental scientists and engineers and sensitize them towards environmental issues.

PO-10 Acquire analytical skills in assessing environmental impacts through a multidisciplinary approach.

PO-11 Identify environmental problems and solutions through organized research.

PO-12 Improve the communication and writing skill so as to face the competitive world

ENERGY AND ENVIRONMENT MEEM-101

Course Objective

CO1- The objective of this paper is to introduce the fundamental processes, principles, and attributes of different ecosystems.

CO2- The applicability of conceptual models in understanding of complex biological systems, its importance, threats and management options

CO3- Overview of current energy scenario and energy resources of the world

CO4 - Knowledge of the relationships between energy, risk, societal safety and sustainable development.

CO5 - Knowledge of energy markets, resource economics and innovation.

WATER SUPPLY SYSTEMS (MEEM-102)

Course Outcomes:

CO1- Define and explain the significance of terms and parameters frequently used in water supply engineering and wastewater management.

CO2- Evaluate the influence of the different parameter in design and treatment of water treatment plant (water quality parameters) and wastewater treatment plant (wastewater characteristics).

CO3- Understand the uses of pumps and their applications in rural, urban and industrial sectors. Uses of pumps for raw water supply and wastewater supply. Its capacity calculations, costing, head loss, total head etc.

CO4- To understand the principals of water treatment and design treatment units

CO5- To devise cost effective water collection and distribution systems

ENVIRONMENTAL POLICY& IMPACT ASSESSMENT (MEEM-103)

Course Outcomes:

CO1- To make them understand the fundamentals of environmental law and its relation with other disciplines of law

CO2- To understand about basics of Indian Constitution and Environment and about various pollution control policies

CO3-. To understand in detail about the Administrative regulation –India and to learn about the constitution of various state Pollution control boards.

CO4- To improve the knowledge on the various Pollution Control Laws and its amendments

CO5-To know about the relevant notifications in environmental (protection) act 1986 and their amendments in the subsequent years.

NATURAL RESOURCES AND BIODIVERSITY (MEEM-115)

COURSE OUTCOMES:

CO1- To introduce the necessity of natural and ecological resources and their management

CO2- Conservation of ecological resources

CO3- Students will also learn the concept of sustainable development

CO4- To learn about different recent initiatives and guidelines for environmental management

CO5- To understand the student about biodiversity conservation

UNIT OPERATIONS AND UNIT PROCESSES (MEEM-201)

COURSE OUTCOMES:

CO1 - To Know about coagulation and sedimentation tanks and factors affecting sedimentation process

CO2 - To know the principle of Laser and its application in Engineering and medicine

CO3 – Having a deep knowledge about the filtration processes and filter media.

CO4 – With a true wisdom about hardness removal methods in water and adsorption kinetics studies in waste water.

CO5 - Having a sound knowledge in the biological treatment process and disinfection process methods

WASTE AND WASTE WATER TREATMENT (MEEM-202)

Course Objective

CO1- Identify and assess the characteristics of wastewater and their impact

CO2- Plan and design the components of wastewater treatment systems

CO3- Understand underlying principles of processes involved in secondary wastewater treatment systems.

CO4- Design sludge treatment and disposal methods

CO5- Ability to understand themethods Potentials for Wastewater recycleand reuse in industries.

SOLID & HAZARDOUS WASTE MANAGEMENT (MEEM-203)

Course objectives

CO1- To provide an overview of waste generation, waste characterization and waste management processes.

CO2- To impart knowledge on solid waste management with particular emphasis on municipal solid wastemanagement which includes different waste processing options such as paralysis, composting, and incineration; designing and operating sanitary landfill.

CO3- To enrich knowledge about characteristics of hazardous wastes and their management

CO4- To make learners focus on energy recovery from biomass, agricultural and industrial wastes for productionof biogas, ethanol, methanol and hydrogen

CO5- To impart knowledge on industry specific solid waste management practices.

ENVIRONMENT BIOTECHNOLOGY (MEEM-211)

CO1- To make them understand the principles and concepts of environmental biotechnology

CO2- To understand about the concept of Environmental biotechnology and its detoxification methods, biotransformation of metals

CO3-. To understand in detail about the microbial technology for waste treatment and the biotechnological remedies for environmental pollution.

CO4- To improve the knowledge on the emerging trends of Recombinant DNA Technology and its application in genetic engineering

CO5- To know about the environmental effects, patents and ethics of microbial technology which includes the safe use of animals in EBT

INSTRUMENTATION (MEEM-218)

COURSE OUTCOMES (COs)

CO1- To make them understand the fundamentals of various Instrumental methods in monitoring the environment

CO2- To understand about the various Spectroscopic Methods of determining the precision and accuracy of the instrument

CO3-. To understand in detail about the Chromatographic methods of separation and the classification of these methods in detail

CO4- To improve the knowledge on the various Electro and Radio Analytical Methods of instrumentation

CO5- To know about the various Continuous Monitoring Instruments such as NDIR analyzers

ENVIRONMENT BIOTECHNOLOGY (MEEM-211)

COURSE OUTCOMES (COs)

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