

## **Environmental Sciences (FD 1012)**

This course addresses the environmental issues, principles, process and practice of environmental design, integration of the built environment in to the surrounding natural landscape. It looks at the relationship between environment and design, its concerns and the effects on the future.

## **ENVIRONMENTAL BIOTECHNOLOGY (BIO 4401) Bioremediation**

Microbial ecology and metabolism: Factors influencing Growth and Biodegradation, Modelling Growth & Biodegradation, Redox reactions, Metabolism of Organic & Inorganics, Phototrophic Metabolism, Cometalism; Mechanisms of Biodegradation: Biodegradation of Hydrocarbons, Halogenated Aliphatics & Aromatics; Bioremediation processes: In situ Remediation of Aquifers & Soils, Solid Phase Bioremediation – Land Treatment & Composting, Slurry-Phase & Vapor phase Bioremediation – Biofilters & Biotrickling filters; Biotreatment of Metals: Microbial Transformation of Metals; Bioleaching; Phytoremediation: Phytoremediation of organics, metals & inorganics, Phytoextraction, Rhizofiltration, Phytostabilization

## **(BIO 4404) Solid Waste Management**

Waste generation in technological society, integrated solid waste management; Types and Composition of solid wastes; Physical, chemical and biological properties of MSW; Properties and classification of Hazardous wastes; transformations of Hazardous waste constituents found in MSW. Collection of solid waste, Separation and Processing and Transformation of solid waste, Transfer and Transport, Disposal of solid wastes and residual matter; Biological and chemical conversion technologies: Solid waste management and planning issues; Implementation of solid waste management options; planning, siting and permitting of waste management facilities.

## **Body, Mind, and Medicine (BIO 4312)**

Explanation of human body and its evolution to the present form. How different cultures interpreted human body: energy centers, energy chakras. Explanation of mind and different aspects of it. Subconscious, conscious mind and their effect during the different stages of human growth. How it has reached the present form. Interaction of mind and body and its effect on human development and growth. The different interpretation of human body by allopathy medicine, Ayurveda medicine and Chinese medicine.

## **Solar Energy (CHE4410)**

Solar spectrum, Solar radiation data, collection of solar energy, Flat plate collectors, parabolic collectors, compound parabolic collectors, Solar air heater, Solar water heater, Solar concentrators, characteristic

parameters, types of concentrators materials in concentrators, Solar cooking, Solar drying, Solar distillation and solar refrigeration, Solar Chimney, Solar thermal power generation, Central Power Station

System, Distributed PV System, Standalone PV system, grid Interactive PV System, hybrid solar PV system, materials for solar PV cells.