

Curriculum for PhD Program in Environmental Health Engineering

Prerequisites:

Environmental microbiology
Process and operation in environmental health
Solid and Industrial Waste
Air pollution control
Water transfer and distribution systems
Designing water treatment plants
Designing wastewater treatment plants (WWTP)
Biostatistics
Integrated vector management
Computer and its application
Medical Systems Information Technologies

Core modules:

Modern Air Pollution Control Technologies
Integrated Solid Waste Management
Environmental Health Planning and Management
Modeling in science and environmental engineering
New Methods of Water Treatment: Processes and Design
New methods of wastewater treatment: processes and design
Advanced Environmental Microbiology

Non-core modules:

Air pollution in vehicles and their control
Consequences of air pollution in indoor and outdoor environments
Air Sampling Methods
Industrial ventilation
Ambient Air Monitoring
Hazardous Air Pollutants Control

Principles of Meteorology
Water and wastewater treatment plants hydraulics
Management of Non-Revenue Water
Water Flow Management
Management and monitoring water quality
Unconventional water supply and transfer systems
Statistical methods in water quality analysis
Bioremediation of water and soil
Management of pollutants on shores and seas
Reusing and re-rotating the water
Natural treatment of wastewater
Methods for sludge production and disposal
Biology and soil microbiology
Small Communities Decentralized Wastewater Treatment
Composting technology (process and design)
Control and purification of leachate
Solid waste landfill (process and design)
Hazardous Waste Management
Soil contamination
Recycling materials and energy
Waste incinerators technology
Management of radiation protection
Environmental toxicology
Energy and the Environment
Computer programming and its application in environmental health
Sound pollution and its control
Design, management and project evaluation
Economics and the environment
Urban and environmental development
The ethics of pollutants in the environment
Geographic Information System (GIS) in Environmental Health

Engineering-based Environmental Management

Environmental Impact Assessment of Development Plans

Risk Assessment and management

Rights, laws and environmental policies

Advanced statistics

Population and the environment

Tools and Techniques in Environmental Analysis

Mathematics and Simulation

Engineering Economics

Kinetics and Thermodynamics of Reactors

Genetics and Environmental Technology