ENVIRONMENTAL ENGINEERING

Administered by:	Department of Civil and Environmental Engineering
Distinguished Professors:	Boufadel, Marhaba
Professors:	Zhang
Associate Professors:	Ding, Olenik, Venkatesan
Assistant Professor:	Pennock
Graduate Advisor:	Fadi Karaa (973) 642-4198, karaa@njit.edu
Degrees Offered:	Master of Science in Environmental Engineering

Master of Science in Environmental Engineering

Intended for engineering students who want broad technical competence in environmental engineering.

Admission Requirements

Bridge Program: Students who lack an appropriate background are asked to make up deficiencies by taking a program of courses that is designed in consultation with the graduate advisor. These courses including their prerequisites, are taken in addition to the degree requirements. Please note that the prerequisites for bridge courses must also be met.

Bridge Courses

CHEM 126	General Chemistry II
CE 320	Fluid Mechanics
CE 321	Water Resources Engineering
CE 341 / 341A	Soil Mechanics / Soils Lab

Degree Requirements

A minimum of 30 degree credits, not including any bridge courses, is required. Candidates must consult with the graduate advisor (not thesis advisor) in designing appropriate programs of study.

Students must attain a minimum GPA of 3.0 in the core courses listed below, and a minimum overall GPA of 3.0.

Students receiving financial aid at any point in their studies must complete 6 credits of EnE 701 Master's thesis.

Core Courses

9 credits as follows:

ENE 630	Physical Processes in Environmental Systems
ENE 661	Microbiology for Env Engr
ENE 663	Water Chemistry

Specialty Electives

9 to 15 credits as follows:

ENE 660	Introduction to Solid & Hazardous Waste
ENE 620	Environmental Chemodynamics
ENE 662	Site Remediation
ENE 664	Physical and Chemical Treatment
ENE 665	Biological Treatment
ENE 671	Environmental Impact Analysis
ENE 672	Stormwater Management
CE 602	Geographic Information Systems Applied
CE 618	Hydrogeology
CE 620	Open Channel Flow
CE 621	Hydrology
CE 648	Flow through Soils
CE 671	Performance and Analysis of Infrastructure Systems

General Electives

0 to 6 credits as follows:

See List of Department General Electives

Management/Leadership Electives

3 to 6 credits as follows:

CE 610	Construction Management
CE 711	Methods Improvement
EM 631	Legal Aspects in Environmental Engineering
HRM 601	Organizational Behavior

ENVIRONMENTAL FACULTY RESEARCH PROFILES

MICHEL BOUFADEL

Ph.D., University of Cincinnati

Professor Boufadel's research has focused on assessing environmental systems at various scales, and on the development of technological advances at the appropriate engineering scale. His research has also been interdisciplinary, and has collaborated with researchers from various fields. Examples of his projects include the Exxon Valdez oil spill, the BP spill, and natural gas extraction from shale formations.

YUAN DING

Ph.D., New Jersey Institute of Technology

Professor Ding's research interests are Stochastic modeling in Groundwater, dynamic fracturing of soils, waste recycling, water and wastewater treatment, and microhydrodynamics. She is currently conducting research in the micromechanics of colloidal particles in wastewater, fugacity modeling of contaminant transport, and contaminent removal by electrokinetics.

TAHA MARHABA

Ph.D., Rutgers University

Professor Marhaba's research activities have focused on drinking water quality and treatment. His current research activities include characterization of natural organic matter in source water by rapid techniques; disinfection and disinfection by-product formation and control; removal of organic contaminants by physical and chemical processes; application of membranes in water treatment optimization; removal of viruses from water by adsorption filtration; carbon foot-prints minimization in transportation; and storm water quality management.

THOMAS OLENIK

Ph.D., Rutgers University

Professor Olenik's research activities concern the impact that environmental regulations have on the development of property for public and private use. He is also interested in stormwater management through the analysis and design of structural improvements to storm sewer systems.

WILLIAM PENNOCK

Ph.D., Cornell University

Professor Pennock's research interests include modeling of conventional drinking water treatment processes (coagulation, flocculation, sedimentation, filtration), technology development for low resource applications, fluid mechanics, lead corrosion, adsorption, and stormwater.

ARJUN VENKATESAN

Ph.D., Arizona State University

Professor Venkatesan's research activities have focused on the occurrence, fate and treatment of emerging contaminants in the environment. Additionally, he develops novel analytical and monitoring approaches to assess human and environmental health risks associated with toxic exposures and drug use.

WEN ZHANG

Ph.D., Georgia Institute of Technology

Professor Zhang's research interests include environmental applications and implications of nanotechnology and engineered nanomaterials; sustainable environmentally benign nanomaterial design and manufacturing, and renewable energy technologies.