

Summary of Course Requirements

* (Note: Core Courses and Electives listed are for the Engineering The Future Funding Program - Students must also satisfy their University's degree requirements regarding core courses and electives, which may differ from those listed here.)

Descriptions for Core Courses (Required)

Elective Courses (must take 3)

Colorado
School of
Mines

ESGN 541 Microbial Process Analysis and Modeling
Microorganisms facilitate the transformation of many organic and inorganic constituents. Tools for the quantitative analysis of microbial processes in natural and engineered systems are presented. Stoichiometries, energetics, mass balances and kinetic descriptions of relevant microbial processes allow the development of models for specific microbial systems. Simple analytical models and complex models that require computational solutions will be presented. Systems analyzed include suspended growth and attached growth reactors for municipal and industrial wastewater treatment as well as in-situ bioremediation systems.

ESGN504 Water and Wastewater Treatment
This course provides an overview of unit operations and processes used for physical, chemical, and biological treatment of water and wastewater. Coverage will include treatment objectives, process theory and introduction to practice.

ESGN 453 Wastewater Engineering
ESGN 454 Water Supply Engineering
ESGN 530 Environmental Eng Pilot Plant Lab
ESGN 586 Microbiology of Engineered Env Systems
ESGN 603 Adv Water Treatment Eng and Water Reuse
ESGN 502 Environmental Law
ESGN 498 Onsite Water Reclamation
ESGN 500 Environmental Water Chemistry
ESGN 501 Environmental Risk Assessment
ESGN 503 Environmental Pollution: Sources, Characteristics, Trnspt and Fate
ESGN 505 Experimental Design and Env Data Analysis
ESGN 522 Subsurface Contaminant Transport
ESGN 527 Watershed Systems Analysis
ESGN 563 Pollution Prevention: Fundamentals and Practices
ESGN 575 Hazardous Waste Site Remediation
ESGN 591 Analysis of Environmental Impact