Rice University introduced the professional master's degree in environmental analysis and decision making in fall 2002. This degree is geared to teach students rigorous methods that are needed by industrial and governmental organizations to deal with environmental issues. As an interdisciplinary program, it aims to give students the ability to predict environmental problems, not just solve them. It emphasizes core quantitative topics such as statistics, remote sensing, data analysis, and modeling. In addition, it teaches laboratory and computer skills and allows students to focus their education by taking electives in relevant fields.

The environmental analysis and decision making degree is part of the professional master's program at Rice housed in the Wiess School of Natural Sciences. These master's degrees are designed for students seeking to gain further scientific core expertise coupled with enhanced management and communications skills. These degrees instill a level of scholastic proficiency that exceeds that of the bachelor's level, and they create the cross-functional aptitudes needed in modern industry. Skills acquired in this program will allow students to move more easily into management careers in consulting or research and development, design, and marketing of new science-based products.

Degree Requirements for MS in Environmental Analysis and Decision Making

In addition to the core science courses, students are required to complete a three- to six-month internship and take a set of cohort courses focusing on business and communications. At the conclusion of the internship, students must present a summary of their internship project in both oral and written form as part of the professional master's seminar.

Part-time students who already work in their area of study may fulfill the internship requirements by working on an approved project with their current employer. For general university requirements for Graduate Study, see Graduate Students section, pages 2–3, and also see Professional Degrees, pages 4–5.

Admission

Admission to graduate study in environmental analysis and decision making is open to qualified students holding a bachelor's degree in a related field that includes general biology, chemistry, calculus, differential equations, and linear algebra. Department faculty evaluate the previous academic record and credentials of each applicant individually.
Required science core courses
- EBIO 570 Ecosystem Management and Conservation
- CEVE 510 Principles of Environmental Engineering
  or
- CEVE 401 Introduction to Environmental Chemistry
- STAT 685 Quantitative Environmental Decision Making

Required Cohort courses
- NSCI 501 Master’s Seminar (two semesters required)
- NSCI 511 Science Policy and Ethics
- NSCI 512 Professional Master’s Project
- NSCI 610 Management in Science and Engineering

Elective Courses
Students will choose 21 credit hours elective courses from the following three focus areas and satisfying the following requirements:
- one course (3 credits) from each of EEB, CEVE, and STAT,
- one course (3 credits) from the Management and Policy focus area,
- three courses (9 credits) from one focus area
- remaining two courses (6 credits)

Recommended courses include, but are not limited to, the following:

Environmental Sustainability
CEVE 307 Energy and the Environment
CEVE 401 Chemistry for Environmental Engineering and Science
CEVE 412 Hydrology and Watershed Analysis
CEVE 415 Water Resources Engineering and Planning
CEVE 511 Atmospheric Processes
CEVE 512 Hydrologic Design Lab
CEVE 534 Fate and Transport of Contaminants in the Environment
CEVE 536 Environmental Biotechnology and Bioremediation
CEVE 550 Environmental Organic Chemistry
EBIO 323 Conservation Biology
EBIO 325 Ecology
EBIO 336 Plant Diversity
EBIO 563 Current topics in Ecology
EBIO 568 Current topics in Conservation Biology
EBIO 569 Core course in Ecology and Evolutionary Biology
ESCI 340 Global Biogeochemical Cycles
ESCI 424 Earth Science and the Environment
ESCI 450 Remote Sensing
ESCI 454 Geographic Information Science
STAT 684 Environmental Risk Assessment and Human Health

Management and Policy
CEVE 505 Engineering Project Development and Management
CEVE 506 Global Environmental Law and Sustainable Development
CEVE 528 Engineering Economics
CEVE 529 Ethics and Engineering Leadership
ESCI 417 Petroleum Industry Economics and Management
ECON 437 Energy Economics
ECON 480 Environmental Economics
SOCH 367 Environmental Sociology
MGMT 609 Managing in a Carbon Constrained World
MGMT 610 Fundamentals of the Energy Industry
MGMT 661 International Business Law
MGMT 674 Production and Operations Management
MGMT 676 Social Enterprise
MGMT 721 General Business Law

Quantitative Decision-Making
EBIO 338 Design and Analysis of Biological Experiments
CEVE 313 Uncertainty and Risk in Urban Infrastructures
CEVE 528 Engineering Economics
ESCI 450 Remote Sensing
ESCI 454 Geographic Information Science
ECON 480 Environmental Economics
STAT 312 Probability and Statistics for Civil and Environmental Engineers
STAT 405* Statistical Computing
STAT 410 Introduction to Linear Models
STAT 553 Biostatistics
STAT 606* SAS Statistical Programming
STAT 684 Environmental Risk Assessment and Human Health

*Only one of these two courses may be counted toward the degree.

Total required credit hours: 39