THE PROGRAM
The Wiess School of Natural Sciences offers professional master’s degrees in the following four areas: Bioscience and Health Policy, Environmental Analysis, Subsurface Geoscience, and Space Studies. These degrees equip students with the skills needed to bridge the gaps between science, business, and government. Students are educated in the scientific approach to problems and are simultaneously trained in vital business concepts, policy issues, and communication skills.

Each degree track is composed of science courses, a set of cohort courses, and an internship. The cohort courses, required for students enrolled in all tracks, focus on business and communication skills and prepare students for work in a nonacademic environment. The required internship allows students to apply the knowledge and skills acquired at Rice while gaining valuable work experience in an industrial setting. This combination of an interdisciplinary curriculum and hands-on experience enables graduates to hit the ground running in a business environment.

Students in the Professional Science Master’s program benefit from Rice’s low student–faculty ratio and its collaborative culture that crosses disciplines and integrates teaching and research. Within the Wiess School of Natural Sciences are six departments, all with strong national reputations and excellent faculty. Wiess School faculty and staff members are active in their fields and professional societies and contribute significantly at national and international levels. Numbered among the faculty are a Nobel laureate, seven members of the National Academy of Sciences and numerous fellows of the American Association for the Advancement of Science and the American Academy of Arts and Sciences. In addition to studying under Wiess School professors, students will be exposed to management issues, policy, ethics, leadership, entrepreneurship, and communication curricula developed and taught by Rice professors in the George R. Brown School of Engineering, the Jesse H. Jones Graduate School of Business, the James A. Baker III Institute for Public Policy, and the Doerr Institute of New Leaders.

PROFESSIONAL SCIENCE MASTER’S FIFTH-YEAR DEGREE OPTION FOR RICE UNDERGRADUATES
Rice students have an option to achieve a Professional Master’s Degree by adding a fifth year to the four undergraduate years of science studies. Advanced Rice students in good standing apply during their junior year, then start taking required core courses of the program during their senior year. A plan of study based on their particular focus area will need to be approved by the faculty advisor.

PSM/MBA COORDINATED DEGREE PROGRAM
In order to offer a deeper immersion into management and business acumen, the Professional Science Master’s is collaborating with Rice’s Jesse H. Jones Graduate School of Business to offer a double PSM/MBA degree program. According to the Professional Science Master’s track chosen, graduates are qualified for leadership roles in industries related to the environment, nanotechnology, energy and government and finance.

SCIENCE COURSES
Each degree track includes a set of core science courses that provide students with the technical knowledge needed by industrial and governmental organizations. Students supplement these foundation courses by choosing electives in line with their areas of interest.

COHORT COURSES
Management for Science and Engineering
This course is designed to give students insights into how technology-oriented firms manage intellectual property, marketing, organizational behavior, strategy, accounting and finance.
Science Policy and Ethics
This course provides students with a broader understanding of the ways that politics, policies and ethics interact with the world of business, science and technology. Topics include business ethics, ethics application, policy and politics, policy analysis, and public policies.

Professional Master’s Seminar
This weekly seminar serves to provide exposure to local industry leaders from all program tracks and to generate a forum for students to present internship project results and receive communication training.

INTERNSHIPS
The required internship is a unique feature of the degrees from the Professional Science Master’s Program. Students are required to complete a three- to six-month internship with a company, government agency or national laboratory. Students may choose any internship in line with their interests and area of study, provided it is approved by the track director. Assistance in identifying potential internships will be provided. Students also will benefit from Rice’s close ties with local and national industry and from personal contact with business executives speaking at the Professional Master’s Seminar.

At the conclusion of this internship, students must present a summary of their internship project(s) in both oral and written form as part of the Professional Master’s Seminar. This serves as the culmination of each student’s academic program in science and industry.

Rice recognizes that many students may have previous industrial experience in their area of study. In lieu of an internship, these students may choose an appropriate project for their final report. Part-time students who already work in their area of study may fulfill the internship requirement by working on a special project with their current employer. All projects require approval from the appropriate track director.

BOARD OF AFFILIATES
Industry has played an important role in all stages of the development of the Professional Science Master’s (PSM) Program at Rice. The PSM Board of Affiliates consists of managers and/or entrepreneurs relevant to each of the industrial focus areas of the four program tracks who advise and guide program faculty on industry workforce needs and provides feedback on curriculum development. The members of the Board of Affiliates have national and international recognition in their fields and assist in identifying future directions and needs within each of the focus areas to keep the program updated and relevant.

MASTER’S DEGREE IN SUBSURFACE GEOSCIENCE
The professional master’s degree in Subsurface Geoscience is designed for students who wish to become proficient in applying geological knowledge, geophysical methods and/or data management to finding and developing reserves of oil and natural gas.

The MSSG degree program offers three areas of specialization:

• Energy Data Management: prepares students to understand exploration and production as a data-driven business, to become data enabled geoscientists to match demands in the energy industry, or
• Geology: prepares students to be explorationists, with strong skills in using seismic and other geophysical methods along with geological principles to find oil and natural gas, or
• Geophysics: prepares students to become technical experts in aspects of exploration seismology.

M.S. IN SUBSURFACE GEOSCIENCE

Required professional courses (9 credits):
NSCI 501  Master Seminar (2 semesters required)
NSCI 501  Master Seminar (2 semesters required)
NSCI 511  Science Policy and Ethics
NSCI 512  Prof Master’s Project
NSCI 610  Management for Science & Engineering
ENGI 610

Required Core for all 3 Specializations (10 credit hours)
ESCI 558  3D Seismic Reflection Interpretation*
ESCI 456  Well Logging and Petrophysics
ESCI 615  OR  Decision Making and Economics in the Energy Industry
ESCI 545  Hydrocarbon Systems Analysis

There are 3 focus areas in the Subsurface Geoscience Track: Geology, Geophysics and Energy Data Management

GEOLOGY FOCUS AREA

Required Core Courses: (6 credit hours)
ESCI 626  Interpretation of Regional 2D Seismic Data*
ESCI 663  Tectonic Systems
ESCI 627  Sequence Stratigraphy
ESCI 504  Siliciclastic Depositional Systems
ESCI 516  Topics on Carbonates

Geology Electives: Students must complete at least 15 credit hours from the following electives:
ESCI 334  OR  Geological Techniques
ESCI 516  Topics on Carbonates
ESCI 545  Hydrocarbon Systems Analysis
ESCI 626  Interpretation of Regional 2-D Seismic Data
ESCI 627  Sequence Stratigraphy
ESCI 642  Exploration Geophysics
ESCI 504  Siliciclastic Depositional Systems
ESCI 506  Carbonate Depositional Systems
ESCI 507  Applied Sedimentology II
ESCI 527  Seminar: Quantitative Petroleum Systems Analysis
ESCI 544  Hydrocarbon Exploration (AAPG Imperial Barrel competition)
ESCI 564  Seismic Reflection Data Processing
ESCI 652  GIS for Scientists and Engineers
ESCI 663  Structure and Evolution of Tectonic Systems
MGMT 609  Managing Energy Transitions
MGMT 610  Fundamentals of the Energy Industry
The core requirements for the degree include courses in geophysical and geological exploration methods, data management, business and policy, as well as an industrial internship or work experience. Students select a group of elective courses from focus areas such as: geology, geophysics and energy data management. The geology focus area prepares students to be “explorationists”, with strong skills in using seismic and other geophysical methods along with geological principles to find oil and gas. The geophysics focus area prepares students to become technical experts in aspects of exploration seismology. The energy data management focus helps students to become data-enabled geoscientists to meet demand in the industry.

This interdisciplinary curriculum includes courses taught by faculty from the earth science, statistics, computer science, computational/applied mathematics and economics departments as well as from the Jones School of Business, and evening classes team-taught by industry leaders.

**THE FACULTY AND THEIR RESEARCH**

Vítor Abreu. Adjunct Professor. Ph.D., Rice University. Senior Exploration Geologist, ExxonMobil Exploration Company. Sequence stratigraphy, evolution of passive margins and deep-water reservoirs.


Jeff Nittrouer. Assistant Professor, Ph.D. University of Texas, 2010. Geomorphology, sedimentology, stratigraphy, basin analysis, coastal systems.


**ADJUNCT FACULTY AND LECTURERS**

Kenneth Abdullah, Vítor Abreu, Kevin Bidelle, Gary Gray, Malcolm Ross, Kurt Rudolph and Lori Summa

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**GEOPHYSICS FOCUS AREA**

**Required Core Courses: (6 credit hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI 626 OR ESCI 663</td>
<td>Interpretation of Regional 2D Seismic Data OR Tectonic Systems</td>
</tr>
<tr>
<td>ESCI 627 OR ESCI 594 OR ESCI 516</td>
<td>Sequence Stratigraphy OR Siliciclastic Depositional Systems OR Topics on Carbonates</td>
</tr>
</tbody>
</table>

**Geophysics Electives: Students must complete at least 15 credit from following electives:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI 564</td>
<td>Seismic Reflection Data Process</td>
</tr>
<tr>
<td>ESCI 640 OR ESCI 641</td>
<td>Geophysical Data Analysis: Digital Signal Processing OR Geophysical Data Analysis: Inverse Methods</td>
</tr>
<tr>
<td>ESCI 642</td>
<td>Exploration Geophysics</td>
</tr>
<tr>
<td>ESCI 534</td>
<td>Geophysical Techniques</td>
</tr>
<tr>
<td>ESCI 504</td>
<td>Siliciclastic Depositional Systems</td>
</tr>
<tr>
<td>ESCI 506</td>
<td>Carbonate Depositional Systems</td>
</tr>
<tr>
<td>ESCI 545</td>
<td>Hydrocarbon Systems Analysis</td>
</tr>
<tr>
<td>ESCI 544</td>
<td>Hydrocarbon Exploration</td>
</tr>
<tr>
<td>ESCI 663</td>
<td>Structure and Evolution of Tectonic Systems</td>
</tr>
<tr>
<td>ESCI 627</td>
<td>Sequence Stratigraphy</td>
</tr>
<tr>
<td>ESCI 652</td>
<td>GIS for Scientists and Engineers</td>
</tr>
<tr>
<td>MGMT 669</td>
<td>Managing Energy Transitions</td>
</tr>
<tr>
<td>MGMT 610</td>
<td>Fundamentals of the Energy Industry</td>
</tr>
</tbody>
</table>

**ENERGY DATA MANAGEMENT FOCUS AREA**

**Required Core Courses: (15 credit hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>COOMP 330 OR COMP 430</td>
<td>Tools and Models for Data Science OR Introduction to Database Systems</td>
</tr>
<tr>
<td>CAAM 620</td>
<td>Topics in Computational Science</td>
</tr>
<tr>
<td>ESCI 549</td>
<td>Energy Data Management</td>
</tr>
<tr>
<td>ESCI 564</td>
<td>Seismic Data Processing *</td>
</tr>
<tr>
<td>ESCI 530</td>
<td>Data Science for Environmental and Geoscience Applications</td>
</tr>
<tr>
<td>ESCI 558</td>
<td>3-D Seismic Data</td>
</tr>
</tbody>
</table>

**Energy Data Management Electives: Students must complete at least 6 credit hours from the following electives:**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESCI 652</td>
<td>GIS for Scientists and Engineers</td>
</tr>
<tr>
<td>MGMT 669</td>
<td>Managing Energy Transitions</td>
</tr>
<tr>
<td>MGMT 610</td>
<td>Fundamentals of the Energy Industry</td>
</tr>
<tr>
<td>CAAM 378</td>
<td>Introduction to Operations Research and Optimization</td>
</tr>
<tr>
<td>CEVE 528</td>
<td>Engineering Economics</td>
</tr>
<tr>
<td>COMP 556</td>
<td>Introduction to Computer Networks</td>
</tr>
<tr>
<td>ECON 601</td>
<td>Energy Economics</td>
</tr>
<tr>
<td>MGMT 661</td>
<td>International Business Law</td>
</tr>
<tr>
<td>MGMT 670</td>
<td>Operations Strategy</td>
</tr>
<tr>
<td>MGMT 676</td>
<td>Social Enterprise</td>
</tr>
<tr>
<td>STAT 518</td>
<td>Probability</td>
</tr>
<tr>
<td>GLBL 543</td>
<td>Energy Policy</td>
</tr>
<tr>
<td>MGMT 611</td>
<td>Geopolitics of Energy</td>
</tr>
</tbody>
</table>

*Prequisite or co-requisite: ESCI 442/642 Exploration Geophysics

Substitutions for required elective courses may be approved by the Track Advisors.

**Internship**

A three- to six-month internship under the guidance of a host company, government agency or national laboratory is required. At the conclusion of this internship, students must present their internship project in both oral and written forms as part of the Professional Master’s Project.

**TOTAL REQUIRED CREDIT HOURS: 40 credits**
MASTER'S DEGREE IN ENVIRONMENTAL ANALYSIS

The Environmental Analysis track will teach students rigorous methods that are needed by industrial and governmental organizations to deal with environmental issues. In addition to track courses, students will take a management course, a policy and ethics course and a seminar jointly with the students involved in the other tracks. To ensure that all students obtain an excellent quantitative background, each student will be required to take a set of core courses. If a student can demonstrate that he or she has learned the material elsewhere, he or she may be exempted. In addition to completing the core courses, the student will choose electives.

THE FACULTY AND THEIR RESEARCH

Janet Braam. Professor, Chair of the Department of Biosciences, Ph.D., Cornell Graduate School of Medical Sciences, 1985. Regulation and functions of genes encoding calmodulin-related proteins and cell wall modifying enzymes of plants. Control of gene expression in response to environmental stimuli. Calcium and nitric oxide signaling. Autophagy regulation.

Pedro Alvarez. Professor, Chair of the Department of Civil and Environmental Engineering, Ph.D., University of Michigan. Biological processes in natural and engineered systems.

Phil Bedient. Professor, Ph.D., University of Florida, 1975. Surface and groundwater hydrology, geographical information and decision support systems, flood control and water quality strategies, modeling, contaminant transport mechanisms in groundwater, aquifer remediation strategies and modeling.

Jim Blackburn. Professor in the Practice of Environmental Law. Sustainable development, air pollution control strategy, and nonstructured flood control.

Susan Cates. Assistant Chair, Ph.D., Rice University, 2000. Crystallographic and computational research on parvalbumin.

Daniel Cohan. Associate Professor, Ph.D., Georgia Institute of Technology, Atlanta, GA, 2004. Photochemical modeling, atmospheric sensitivity analysis, pollutant impacts on human health and vegetation, and environmental policy and management.

Scott Egan. Assistant Professor, Ph.D., Vanderbilt University, 2010. Environmental diagnostics, evolution, speciation, population genetics and genomics.

Qilin Li. Professor, Ph.D., University of Illinois at Urbana-Champaign, 2002. Advanced treatment technologies for water quality control, membrane processes, colloids and interface science, and environmental impact of nanomaterials.

Loren Raun. Faculty Fellow, Ph.D. Rice University, 1998. Environmental statistics, human health risk assessment (including stochastic), air, soil and ground water pollution fate and transport.

Peter Rossky. Dean of Wiess School of Natural Sciences, Ph.D., Harvard University, 1978. Theoretical chemistry, computer simulation, solvent effects on chemical reactions, condensed phase quantum dynamics, photochemistry.

MASTER’S DEGREE IN BIOSCIENCE AND HEALTH POLICY

The Bioscience and Health Policy track will give students a deep background in science complemented by courses in business, economics, humanities and policy studies to foster their understanding of the role of science in policy making and the role of public policy in science. Their coursework provides study skills enabling students to develop specific policy recommendations. Students also receive the tools to become knowledgeable in the formulation and execution of public policy. In addition to track courses, students take an overview course in Science and Policy and Ethics, management courses, and a seminar jointly with the students involved in the other tracks.

Direct access to the Baker Institute for Public Policy allows students to work closely with policy scholars as well as meet with many of the leaders in science and technology policy, healthcare management and business. This program focuses on training healthcare professionals and health policy analysts, providing them with the tools to face the complex challenges inherent in the US bioscience research, public health, healthcare systems, and health-related industry.

THE FACULTY AND THEIR RESEARCH

Janet Braam. Professor, Chair of the Department of Biosciences. Ph.D., Cornell Graduate School of Medical Sciences, 1985. Regulation and functions of genes encoding calmodulin-related proteins and cell wall modifying enzymes of plants. Control of gene expression in response to environmental stimuli. Calcium and nitric oxide signaling. Autophagy regulation.

Andrew R. Barron. Professor, Ph.D., Imperial College of Science and Technology, University of London, 1986. Applications of inorganic chemistry to materials science of aluminum, gallium and indium.

George Bennett. Professor, Ph.D., Purdue University, 1968. Genetic engineering of metabolic pathways of microbes for production of biofuels and chemicals. Molecular biology of prokaryotes.

M.S. IN BIOSCIENCE AND HEALTH POLICY

Four Required Bioscience Classes:
The bioscience courses give in-depth instruction in specialized areas of Bioscience. Four courses are required to obtain a broad understanding of diverse areas of cutting edge bioscience research.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 524</td>
<td>Microbiology and Biotechnology (S)</td>
</tr>
<tr>
<td>BIOC 525</td>
<td>Plant Molecular Genetics and Development (F)</td>
</tr>
<tr>
<td>BIOC 540</td>
<td>Metabolic Engineering</td>
</tr>
<tr>
<td>BIOC 544</td>
<td>Developmental Biology (S)</td>
</tr>
<tr>
<td>BIOC 545</td>
<td>Advanced Molecular Biology and Genetics (F)</td>
</tr>
<tr>
<td>BIOC 547</td>
<td>Biology and Medicine (S)</td>
</tr>
<tr>
<td>BIOC 550</td>
<td>Viruses and Infectious Diseases</td>
</tr>
<tr>
<td>BIOC 555</td>
<td>Computational Synthetic Biology</td>
</tr>
<tr>
<td>BIOC 560</td>
<td>Cancer Biology (S)</td>
</tr>
<tr>
<td>BIOC 570</td>
<td>Computation with Biological Data</td>
</tr>
<tr>
<td>BIOC 573</td>
<td>Immunology (S/F)</td>
</tr>
<tr>
<td>BIOC 580</td>
<td>Protein Engineering</td>
</tr>
<tr>
<td>BIOC 585</td>
<td>Fundamentals of Cellular, Molecular, and Integrative Neuroscience (F)</td>
</tr>
<tr>
<td>EBIO 525</td>
<td>Conservation Biology</td>
</tr>
<tr>
<td>EBIO 524</td>
<td>Conservation Biology Lab</td>
</tr>
<tr>
<td>EBIO 525</td>
<td>Ecology</td>
</tr>
<tr>
<td>EBIO 540</td>
<td>Global Biogeochemical Cycles</td>
</tr>
</tbody>
</table>

Required Cohort Courses:

- NSCI 501 Master’s Seminar (two semesters required) (S/F)
- NSCI 511 Science and Technology Policy (S)
- NSCI 512 Professional Master’s Project (S)
- NSCI 610 Management in Science and Engineering (S/F)

Four Statistics, Economics, and Policy Courses:
The analytical competency requirement provides career-enhancing, marketable skills in policy analysis, economics and statistics. Students will take courses from groups A, B and C as indicated below:

A – One Statistics/Data Analytics Course: (3 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOE 552</td>
<td>Intro Computational Systems Biology</td>
</tr>
<tr>
<td>ESCE 654</td>
<td>Geographic Information Science</td>
</tr>
<tr>
<td>STAT 305</td>
<td>Introduction to Statistics in Biosciences</td>
</tr>
<tr>
<td>STAT 385</td>
<td>Methods of Data Analysis</td>
</tr>
<tr>
<td>STAT 553</td>
<td>Biostatistics</td>
</tr>
<tr>
<td>STAT 605</td>
<td>R for Data Science</td>
</tr>
<tr>
<td>STAT 684</td>
<td>Environmental Risk Assessment and Human Health</td>
</tr>
</tbody>
</table>

B – One Economics Course: (3 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 450</td>
<td>Economic Development</td>
</tr>
<tr>
<td>MGMT 631</td>
<td>Health Insurance in the US: The Essentials</td>
</tr>
<tr>
<td>MGMT 673</td>
<td>Cost Analysis in Health Care</td>
</tr>
<tr>
<td>MGMT 678</td>
<td>U.S. Healthcare Management</td>
</tr>
<tr>
<td>MGMT 679</td>
<td>Cost and Quality in Health Care</td>
</tr>
<tr>
<td>MGMT 680</td>
<td>Healthcare Strategy</td>
</tr>
<tr>
<td>MGMT 750</td>
<td>Strategic Considerations in Health Informatics</td>
</tr>
<tr>
<td>MGMT 751</td>
<td>Economics of Healthcare Sectors</td>
</tr>
<tr>
<td>PH 3910*</td>
<td>Introduction to Health Economics</td>
</tr>
</tbody>
</table>

C – Two Policy Courses: (6 credit hours)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH 581</td>
<td>Medical Anthropology</td>
</tr>
<tr>
<td>ANTH 643</td>
<td>Race, Ethnicity and Health</td>
</tr>
<tr>
<td>NSCI 530</td>
<td>Shaping of Health Policy</td>
</tr>
<tr>
<td>HEAL 580</td>
<td>Disparities in Health in America</td>
</tr>
<tr>
<td>MGMT 631</td>
<td>Health Insurance in the US: The Essentials</td>
</tr>
<tr>
<td>MGMT 690</td>
<td>Healthcare Strategy</td>
</tr>
<tr>
<td>MGMT 691</td>
<td>Negotiations for Healthcare</td>
</tr>
<tr>
<td>MGMT 694</td>
<td>Interpersonal Communication in Healthcare</td>
</tr>
<tr>
<td>SOC 525</td>
<td>Population Health Seminar</td>
</tr>
</tbody>
</table>

Required Internship:
A three- to six-month internship with a company, government agency or national laboratory. At the conclusion of this internship, students must present their internship project in both oral and written form as part of the Professional Master’s Project.

Two Elective Courses: (6 credit hours)
The electives reflect individual academic interests and career goals. Any course from the above list of Bioscience courses can be taken as an elective, provided it was not taken as a required course. In addition, the following classes qualify as elective classes:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGI 515</td>
<td>Leading Teams and Innovation</td>
</tr>
<tr>
<td>ENGI 529</td>
<td>Ethics and Engineering Leadership</td>
</tr>
<tr>
<td>ENGI 614</td>
<td>Learning How to Innovate</td>
</tr>
<tr>
<td>ENGI 615</td>
<td>Leadership Coaching for Engineers</td>
</tr>
<tr>
<td>HEAL 507</td>
<td>Epidemiology</td>
</tr>
<tr>
<td>HEAL 560</td>
<td>Planning and Evaluation of Health Promotion and Education</td>
</tr>
<tr>
<td>HURC 506</td>
<td>Health and Humanities Master Class</td>
</tr>
<tr>
<td>MGMT 625</td>
<td>Commercialization in Pharma/Biotech</td>
</tr>
<tr>
<td>MGMT 635</td>
<td>Life Science Entrepreneur</td>
</tr>
<tr>
<td>MGMT 712</td>
<td>Process Management and Quality Improvement</td>
</tr>
<tr>
<td>MGMT 738</td>
<td>Customer Focus in Healthcare and Service Industries:</td>
</tr>
<tr>
<td></td>
<td>A Strategic Approach</td>
</tr>
<tr>
<td>MGMT 961</td>
<td>Business Law</td>
</tr>
<tr>
<td>PHIL 336</td>
<td>Topics in Medical Ethics</td>
</tr>
</tbody>
</table>

Other courses can be submitted for approval by the faculty advisor.

Note: Each course may not be offered every year, and some courses may have prerequisites or require instructor permission. Students can also choose electives from courses offered at UT Graduate School of Biomedical Sciences (GS) and UT School of Biomedical Informatics, UT School of Public Health, (PH) and UT Health Science Center, (HI) as listed above.

TOTAL REQUIRED CREDIT HOURS: 39 hours
ESCI 650 Remote Sensing

CEVE 528 Engineering Economics (S)

CAAM 453 Numerical Analysis I

MECH 592 Aerospace Environments

MECH 545 Computational Fluid Mechanics (F)

MECH 544 Developmental Biology

MECH 545 Advanced Molecular Biology and Genetics

MECH 540 Metabolic Engineering

MECH 544 Atmospheric Processes (F)

MECH 540 Computational Fluid Mechanics (F)

MECH 540 Intro to Robotics (S)

MECH 540 Aerospace Systems Engineering

MECH 540 Gas Dynamics (S)

MECH 540 Aerospace Environments

MECH 540 Intro to Aeronautics

MECH 540 Life Science Entrepreneurship

MECH 540 Flight Mechanics

MECH 540 and others …

Focus: Engineering

CEVE 504 Atmospheric Particular Matter (S)

CEVE 505 Eng. Project Development & Management (F)

CEVE 511 Atmospheric Processes (F)

CEVE 576 Structural Dynamics and Control (S)

ENG 515 Leading Teams in Innovation

ENG 614 Learning How to Innovate (F)

MECH 454 Computational Fluid Mechanics (F)

MECH 498 Intro to Robotics (S)

MECH 572 Aerospace Systems Engineering

MECH 591 Gas Dynamics (S)

MECH 592 Aerospace Environments

MECH 594 Intro to Aeronautics

MECH 596 Life Science Entrepreneurship

MECH 596 and others …

Focus: Sciences (Astro Science / Earth Science / Life Sciences)

ASTR 542 Nebular Astrophysics

ASTR 554 Astrophysics of the Sun (S)

ASTR 555 Protostars and Planets (S)

ASTR 565 Compact Objects (S)

BIOC 524 Microbiology and Biotechnology

BIOC 540 Metabolic Engineering

BIOC 545 Developmental Biology

BIOC 545 Advanced Molecular Biology and Genetics

BIOC 570 Computational with Biological Data

BIOC 580 Protein Engineering

ESCI 667 Geomechanics

ESCI 672 Numerical Methods Earth Systems

ESCI 540 Earth’s Atmosphere

ESCI 581 Topics in Planetary Dynamics

ENG 515 Leading Teams in Innovation

ENG 614 Learning How to Innovate

MGMT 633 Life Science Entrepreneurship

MECH 596 and others …

Total Required Credit Hours: 39 hours

NOTE: FOCUS AREAS IN EARTH SCIENCE, PHYSICS AND LIFE SCIENCES can be chosen - depending on student’s background. Students will consult with academic advisor about appropriate selection of their elective science courses.

Focus: Management and Entrepreneurship

ENG 515 Leading Teams in Innovation

ENG 614 Learning How to Innovate (F)

MGMT 601 Financial Statement Analysis (F)

MGMT 618 Complexities of People and Organizations (F)

MGMT 619 Corporate Governance (S)

MGMT 629 Business Plan Development (F)

MGMT 633 Life Science Entrepreneurship

MGMT 658 Applied Risk Management (S)

MGMT 734 Technology Entrepreneurship

MGMT 658 and others …

A 3 – 6 months internship: Practical experience is offered via a 3 – 6 month work immersion. The internship will be under the guidance of a host company, government agency, or non-profit organization. A summary of the internship project is required in both oral and written form as part of the Professional Master’s Seminar.

Other courses can be submitted for approval by the faculty advisor.
Andrew Meade. Professor and Chair, Department of Mechanical Engineering, Ph.D. University of California. George R. Brown School of Engineering. Experimental and numerical aerodynamics.


Stephen Bradshaw. Assistant Professor, Ph.D. Aberystwyth University, Wales, UK 2000. William V. Vietti Junior Chair of Space Physics; Heating in the solar atmosphere; energy transport processes; time-dependent ionization states; emission line spectroscopy; Electron and ion kinetics; non-equilibrium processes; non-local phenomena; hybrid fluid-kinetic models. Numerical modeling.


Ramon Gonzalez. Professor, Chemical Engineering, and Chemical and Biomolecular Engineering, Ph.D. University of Chile, 2001. Metabolic Engineering, Functional Genomics: Transcriptomics, Proteomics, Metabolomics, and Fluxomics; Systems Biology; Microbial Fermentations.


Peter Rossky. Dean of Wiess School of Natural Sciences. Ph.D., Harvard University, 1978. Theoretical chemistry, computer simulation, solvent effects on chemical reactions, condensed phase quantum dynamics, photochemistry.


Hadley Wickham. Adjunct Associate Professor, Dobelman Family Junior Chair. Ph.D. Iowa State University 2008. Statistics. Statistical computing, focused heavily on statistical graphics


Marcia O’Malley. Professor, Ph.D. Vanderbilt University, 2001. Mechanical Engineering and Materials science. Modeling, design, and control of haptic interfaces; Modeling, design, and control of telemanipulation and human augmentation systems; Study of human-robot interactions.

COURSE AVAILABILITY
Courses listed in this brochure don’t reflect all courses available every year. Students are requested to consult with their academic advisors before enrolling.
ADMISSION
Admission requirements for the Professional Master’s Program degrees will vary with each track. All students must have a science engineering bachelor’s degree and submit general GRE scores, official transcripts, letters of recommendation and a completed application. Contact the program director or visit the program Website at www.profms.rice.edu for specific admission information.

TUITION
Most students require three full semesters of courses to complete the Professional Master’s Program. Graduate tuition for academic year 2018–19 is $19,000 per semester. The student does not pay tuition during the internship period, but may need to pay a small fee to continue full-time student status. Although Rice does not offer financial assistance for these degrees, most U.S. citizens and permanent residents are eligible for federal student loans and work-study programs. Sources of additional financial assistance can be found at www.profms.rice.edu.

ABOUT RICE AND HOUSTON
Rice is a leading American research university — small, private and highly selective — distinguished by a collaborative, interdisciplinary culture, and a global perspective. Only a few miles from downtown Houston, it occupies an architecturally distinctive, 285-acre campus shaded by nearly 4,000 trees. State-of-the-art facilities and laboratories, internationally renowned centers and institutes, and one of the country’s largest endowments support an ideal learning and living environment.

The university attracts a diverse group of highly talented students and faculty with outstanding graduate and professional programs in the humanities, social sciences, natural sciences, engineering, architecture, music, and business. With just 3,000 graduate students and 4,000 undergraduates, Rice offers an unusual opportunity to forge close relationships with eminent faculty scholars and researchers and the option to tailor graduate programs to specific interests.

Houston offers all the expected educational, cultural and commercial advantages of a large urban center, and more. It’s home of the Texas Medical Center, the largest concentration of medical schools, hospitals and research facilities in the world, as well as several other universities. Rice has cooperative programs with the University of Houston, Baylor College of Medicine, the University of Texas Health Science Center, and Texas Southern University. Houston is one of the few U.S. cities with resident companies in all four major performing arts: drama, ballet, opera, and symphony. It also boasts a museum district featuring exhibits of national and international prominence.

As urban as it is, Houston also is a surprisingly green city. Houstonians enjoy the outdoors in more than 300 municipal parks and 120 open spaces with 160 miles of bike paths, and many frequent the beach at Galveston Island, only a 45-minute drive away. Other short trips include Austin, the state’s capital, and historic San Antonio, less than three hours away.

FOR MORE INFORMATION
To receive more information about the Professional Master’s Program:

Contact:
Dagmar K. Beck
Director, Professional Science Master’s Program
713-348-3188
profms@rice.edu

or

Lindsey Hodge
Program Administrator
713-348-2372

Dean of the Wiess School of Natural Sciences
Peter Rossky: 713-348-3350

Or fax: 713-348-3121

Or write to:
Rice University
Professional Science Master’s Program
Wiess School of Natural Sciences-MS 103
P.O. Box 1892
Houston, Texas 77251-1892

Or visit the program Web site: www.profms.rice.edu

FOR ADDITIONAL INFORMATION:
Rice University homepage:
www.rice.edu

Rice University Office of Graduate and Postdoctoral Studies homepage:
graduate.rice.edu

Graduate Student Association homepage:
gsa.rice.edu

City of Houston homepage:
www.houstontx.gov

Houston information from the Houston Chronicle:
www.chron.com

Houston information from the Greater Houston Partnership:
www.houston.org

Houston information from Citysearch:
houston.citysearch.com

RICE