Required Courses

Choose two of the following:

- CRJU 215. Introduction to Criminal Justice
- SOCI/JUST 325. Criminology
- PSYC 250. Introduction to Abnormal Psychology (Non PSYC majors only) or PSYC 335. Abnormal Psychology (PSYC majors)

Choose five from the following: (Courses must be in at least two different academic disciplines)

- PHIL 325. Crime, Punishment and Justice
- POSC 326. Civil Rights
- PSYC 250. Introduction to Abnormal Psychology (Non PSYC majors) or PSYC 335. Abnormal Psychology (PSYC majors)
- PSYC 312. Forensic Psychology
- CRJU 215. Introduction to Criminal Justice
- CRJU 328. Criminal Procedure
- CRJU 329. Criminal Investigation and Evidence
- JUST 327. Criminal Law
- JUST 323. Comparative Criminal Justice
- SCOM 231. Introduction to Alternative Dispute Resolution
- SCOM 331. Communication and Conflict
- SOCI 214. Social Deviance
- SOCI/JUST 325. Criminology
- SOCI 327. Juvenile Delinquency
- SOCI 330. Corrections

Any one of the following:

- POSC 495. Internship in Political Science
- PSYC 495. Field Placement in Psychology
- PPA 496. Internship in Public Management
- SOCI 485. Internship in Sociology

Any one of the following:

- PSYC 402. Independent Research in Psychology
- SOCI 490. Special Studies in Sociology

Transfer Credit

A maximum of three courses may be transferred into the criminal justice minor from other institutions. No transfer credit will be given for any course offered in the minor at the 300 or 400 level.

Environmental Information Systems

Dr. Steven P. Frysinger, Director
Phone: (540) 568-2710
E-mail: frysinsp@jmu.edu

The interdisciplinary minor in environmental information systems is designed for undergraduates interested in using computer and information technology to solve environmental problems and improve environmental stewardship. Some examples of environmental information systems are database systems to track and report hazardous materials in factories, decision support systems to facilitate risk analysis and management, GIS-based natural resource inventory systems, and automated business management systems to support and document environmental compliance.

Environmental Management

Dr. Steven P. Frysinger, Director
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E-mail: frysinsp@jmu.edu

The environmental management program prepares students to apply the principles of environmental science and engineering to contemporary environmental problems in both natural resource and industrial contexts. Students from a variety of majors can pursue an interdisciplinary minor in environmental management. After completing prerequisite foundation courses in science and math, students pursue the minor by completing core courses and a concentration, optionally culminating in a capstone thesis or project.

The environmental management program strives to develop graduates who are literate in and competent with the foundation sciences and mathematics underlying environmental science and engineering, and who can apply science and technology to a broad range of practical environmental problems.

Minor Requirements

The environmental management minor requires a total of 22 credits, excluding prerequisite cognate courses and an optional seminar and thesis. The cognate courses, or their equivalents, must have been completed successfully before the student may be enrolled in the environmental management minor. This may be accomplished as part of the student’s major.
### Cognate Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 114</td>
<td>Organisms</td>
<td>4</td>
</tr>
<tr>
<td>BIO 124</td>
<td>Ecology and Evolution</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 131-132</td>
<td>General Chemistry I-II</td>
<td>6</td>
</tr>
<tr>
<td>MATH 235-236</td>
<td>Calculus I-II</td>
<td>8</td>
</tr>
<tr>
<td>PHYS 240-250</td>
<td>University Physics I-II</td>
<td>6</td>
</tr>
</tbody>
</table>

1. MATH 231-232 may be substituted for MATH 235-236.
2. PHYS 125-126 or PHYS 140-150 may be substituted for PHYS 240-250.

### Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISAT 320-31</td>
<td>Fundamentals of Environmental Science and Technology I-II</td>
</tr>
<tr>
<td>ISAT 302</td>
<td>Instrumentation and Measurement of the Environment</td>
</tr>
<tr>
<td>ENVM 490</td>
<td>Environmental Management Seminar (optional)</td>
</tr>
<tr>
<td>ENVM 491-492</td>
<td>Senior Thesis/Project I-II (optional)</td>
</tr>
</tbody>
</table>

### Concentrations

The environmental management minor concentrates in one of two areas, natural resources and industrial systems. Students should be aware that some of the listed courses may have additional prerequisites.

#### Natural Resources

- ISAT 424. Natural Resource Management

Choose four of the following courses:

- BIO 451. Ecological Systems
- BIO 453. Microbial Ecology
- BIO 459. Freshwater Ecology
- CHEM 355. Geochemistry of Natural Waters
- ECON 340. Economics of Natural Resources
- GEOG 325. Environmental Ethics
- GEOG 327. Climatology
- GEOG 340. Biogeography
- GEOG 385. Principles of Remote Sensing
- GEOL 320. Meteorology
- GEOL 460. Geohydrology
- ISAT 420. Environmental Analysis and Modeling
- ISAT 421. Environmental Policy and Regulation
- ISAT 425. Environmental Hydrology
- ISAT 426. Environmental Information Systems
- ISAT/GEOG 429. Sustainability: An Ecological Perspective

#### Industrial Systems

- ISAT 422. Environmental Management

Choose four of the following courses:

- ECON 305. Environmental Economics
- HTH 352. Environmental Health
- HTH 450. Epidemiology
- ISAT 410. Sustainable Energy Development
- ISAT 421. Environmental Policy and Regulation
- ISAT 423. Environmental Remediation
- ISAT 426. Environmental Information Systems
- ISAT 427. Industrial Hygiene
- ISAT 428. Industrial Ecology

### Environmental Studies

**Dr. Stephen A. Leslie, Director**

Phone: (540) 568-6130  
E-mail: lesliesa@jmu.edu

The minimum requirement for a minor in Environmental Studies is 18 hours with a maximum of three courses from either discipline (natural or social science).

### Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 124</td>
<td>Ecology and Evolution</td>
<td>4</td>
</tr>
<tr>
<td>BIO 451</td>
<td>Ecological Systems</td>
<td>4</td>
</tr>
<tr>
<td>BIO 452</td>
<td>Population Ecology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 453</td>
<td>Microbial Ecology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 459</td>
<td>Freshwater Ecology</td>
<td>4</td>
</tr>
<tr>
<td>GEOL 211</td>
<td>Introduction to Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 310</td>
<td>Management of Marine Resources</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 320</td>
<td>Meteorology</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 340</td>
<td>Soils and Land Use</td>
<td>3</td>
</tr>
<tr>
<td>GEOL 355</td>
<td>Geochemistry of Natural Waters</td>
<td>3</td>
</tr>
<tr>
<td>ISAT 320</td>
<td>Fundamentals in Environmental Science</td>
<td>3</td>
</tr>
<tr>
<td>ISAT 421</td>
<td>Environmental Policy and Regulation</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 354</td>
<td>Environmental Chemistry Field Camp</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 215</td>
<td>Energy and the Environment</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Social science (choose three from the following):

- ANTH 196. Biological Anthropology
- ANTH 355. Culture and Ecology
- ECON 305. Environmental Economics
- ECON 340. Economics of Natural Resources
- GEOG 300. Population Geography
- GEOG 310A-D. Environmental Issues
- GEOG 325. Environmental Ethics
- GEOG 327. Climatology
- GEOG 340. Biogeography
- GEOG 341. Wilderness Techniques
- HTH 352. Environmental Health
- PHIL 395. Philosophy and Scientific Inquiry

A student may not receive dual credit for required courses that apply to both the major and minor. The program encourages students to pursue environmental research topics through participation in the individual research options of the various departments involved.

### Family Studies

**R. Ann Myers, Minor Adviser**

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E-mail: myersra@jmu.edu

The interdisciplinary minor in family studies is designed for undergraduates seeking enhancement of their major, desiring to increase understanding of self and relationships, and seeking to make a positive contribution to society. A substantial knowledge of family-related issues, family processes, policies, laws, services and the interrelationship of families and societies will enhance majors in many fields including anthropology, early and middle education, health sciences, management, nursing, psychology, social work and sociology. The minor encourages students to make connections between their major field and family studies, thereby adding value to the major.

The family studies minor requires a minimum of 18 credit hours with no more than six credit hours in the student's major.

[http://www.jmu.edu/catalog/08](http://www.jmu.edu/catalog/08)