

Rochester INSTITUTE OF TECHNOLOGY

Minor Program proposal form

College of Science

**Name of Certifying Academic Unit:** School of Life Sciences

**Name of Minor:** Environmental Modeling

**Brief description of the minor to be used in university publications**

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| The Environmental Modeling Minor is designed to introduce students to the process of spatial modeling as part of a toolset for investigating environmental issues and provide students with opportunities to apply these skills through advanced course work. The required core courses are designed to give students a solid foundation of environmental issues and concepts. Central to this minor are the skills in the use of geographic information system (GIS) and remote sensing techniques, problem solving skills, and an understanding of the multiple stakeholder perspectives often involved with environmental issues. Students interested in pursuing employment or an advanced degree with an environmental focus will find this minor beneficial |

**1.0 Minor Program Approvals**

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| --- | --- | --- |
|  | Approval request date: | Approval granted date: |
| Academic Unit Curriculum Committee | 1-27-2012 | 1-27-2012 |
| College Curriculum Committee | 1-31-2012 | 1-31-2012 |
| Inter-College Curriculum Committee |  |  |

**2.0 Rationale:**

A minor at RIT is a related set of academic courses consisting of no fewer than 15 semester credit hours leading to a formal designation on a student's baccalaureate transcript

How is this set of academic courses related?

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| The courses offered help students understand the various aspects of environmental problem solving and provide them with both skill sets and opportunities to work through environmental problem solving. The three required foundational courses provide skill sets and an introduction to problem solving. The advanced electives are designed to give the students depth. |

**3.0 Multidisciplinary involvement:**

If this is a multidisciplinary minor spanning two or more academic units, list the units and their role in offering and managing this minor.

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| Primarily based in the COS, many of the courses are offered by the Environmental Science (ES) program within the School of Life Sciences (SOLS). One required course, Environment and Society (COLA-STSO-220), is offered by the Science, Technology, and Society Program. A second required course, COS-IMGS-431-Environmental Applications of Remote Sensing, is offered by Imaging Science. SOLS will have the administrative responsibility for overseeing the minor. |

**4.0 Students ineligible to pursue this minor:**

The purpose of the minor is both to broaden a student's college education and deepen it in an area outside the student’s major program. A minor may be related to and complement a student’s major, or it may be in a completely different academic/professional area. It is the responsibility of the academic unit proposing a minor and the unit’s curriculum committee to indicate any home programs for which the minor is not a broadening experience.

Please list below any home programs whose students will not be allowed to pursue this minor, provide the reasoning, and indicate if this exclusion has been discussed with the affected programs:

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| Environmental Science majors will not be allowed to minor in Environmental Modeling since most of the courses are required for the major. |

**5.0 Minor Program Structure, Sequence and Course Offering Schedule:**

Describe the structure of the proposed minor and list all courses, their anticipated offering schedule, and any prerequisites.

* All minors must contain at least fifteen semester credit hours;
* Minors may be discipline-based or interdisciplinary;
* In most cases, minors shall consist of a minimum of two upper division courses (300 or above) to provide reasonable breadth and depth within the minor;
* As per New York State requirements, courses within the minor must be offered with sufficient frequency to allow students to complete the minor within the same time frame allowed for the completion of the baccalaureate degree;
* Provide a program mask showing how students will complete the minor.

Narrative of Minor Program Structure:

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| a three course foundation sequence will be followed by two advanced courses. The two courses, Concepts of Environmental Science and Environment and Society, will provide the background for framing environmental problems, while Applications of Geographic Information Systems will provide the initial tools for building spatial models and integrating environmental databases. The advanced courses will focus on expanding the range and depth of the spatial tools by using environmental data in ecological and environmental applications, models, and case studies. A grade of a C or better must be attained in all courses applied to the minor. |

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| Course Number & Title | SCH | Required | Optional | Fall | Spring | Annual/ Biennial | Prerequisites |
| ENVS-101-Concepts of Environmental Science | 3 | X |  | X |  | Annual | None |
| STSO-220-Environment and Society | 3 | X |  | X |  | Annual | None |
| ENVS-250-Applications of Geographic Information Systems | 4 | X |  | X |  | Annual | ENVS-101 |
| ENVS-450-Hydrologic Applications of Geographic Information Systems | 4 | X |  |  | X | Annual | ENVS-250 |
| IMGS-431-Env. Apps. of Remote Sensing | 3 | X |  |  | X | Annual | ENVS-250 |

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| Total credit hours: 17 |  |

**Minor Course Conversion Table: Quarter Calendar and Semester Calendar Comparison**

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| **Directions: The tables on this page will be used by the registrar’s office to aid student’s transitioning from the quarter calendar to the semester calendar.**  **If this minor existed in the quarter calendar and is being converted to the semester calendar please complete the following tables.**  **If this is a new minor that did not exist under the quarter calendar do not complete the following tables.**  Use the following tables to show minor course comparison in quarter and semester calendar formats. Use courses in the (2011-12) minor mask for this table. Display all required and elective minor courses. If necessary clarify how course sequences in the quarter calendar convert to semesters by either bracketing or using some other notation. |

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| Name of Minor in Semester Calendar: | Environmental Modeling |
| Name of Minor in Quarter Calendar: | Environmental Modeling |
| Name of Certifying Academic Unit: | School of Life Sciences |

| **QUARTER: Current Minor Courses** | | | **SEMESTER: Converted Minor Courses** | | |  |
| --- | --- | --- | --- | --- | --- | --- |
| Course # | Course Title | QCH | Course # | Course Title | SCH | **Comments** |
| 1006-202 | Concepts of Environmental Science | 4 | ENVS-101 | Concepts of Environmental Science | 3 |  |
| 0508-460 | Environment and Society | 4 | STSO-220 | Environment and Society | 3 |  |
| 1006-350 | Applications of GIS | 4 | ENVS-250 | Applications of GIS | 4 | ENVS-101 is a required pre-requisite for the Environmental Modeling minor. |
| 1006-450 | Raster Applications of GIS | 4 |  |  |  | Content of this course was split between ENVS-250 and ENVS-450 in the semester conversion. |
| 1006-750 | Ecological and Environmental Applications of GIS | 4 | ENVS-450 | Advanced Applications of GIS | 4 | See above comment – ENVS-450 now contains elements of 1006-750 and 1006-450. This course requires ENVS-250. |
| 1051-420 | Environmental Applications of Remote Sensing | 4 | IMGS-431 | Environmental Applications of Remote Sensing | 3 | ENVS-250 is the pre-req. for this course. |