

Rochester INSTITUTE OF TECHNOLOGY

Minor Program proposal form

College of science

**Gosnell School of Life Sciences**

**Name of Minor:** Biology: Cellular and Molecular

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

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| The minor in Biology: Cellular and Molecular provides students with the opportunities to experience and explore topics related to both the cellular and molecular aspects of modern biology to broaden and enhance their educational experience. |

**1.0 Minor Program Approvals**

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| --- | --- | --- |
|  | Approval request date: | Approval granted date: |
| Academic Unit Curriculum Committee | 11/8/13 | 11/8/13 |
| College Curriculum Committee | 2/14/14 | 2/17/14 |
| Inter-College Curriculum Committee | 4/30/14 | 5/7/14 |

**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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| **All courses are focused on the biological subfields of Molecular and Cellular Biology. This includes courses that are focused on individual cells in addition to whole organisms. The courses will be primarily focused on aspects related to cellular and molecular biology in addition to experiential learning facilitated by courses with a mandatory laboratory component.** |

**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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| N/A |

**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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| Biology  Biotechnology and Molecular Bioscience  Biomedical Sciences  Biochemistry  Bioinformatics |

**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:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| The minor has prerequisites of BIOL-101, 102, 103 and 104 (General Biology I and II and the accompanying labs), or BIOL-121 and 122 (Introductory Biology). Students are required to take BIOL-201 Cellular and Molecular Biology, then complete enough elective courses to reach 15 credits, of which at least two courses must be at 300 level or above. | | | | | | | |
| Course Number & Title | SCH | Required | Optional | Fall | Spring | Annual/Biennial | Prerequisites |
| **Prerequisites:** |  |  |  |  |  |  |  |
| BIOL-101 General Biology I | 3 | X |  | X |  | Annual |  |
| BIOL-102 General Biology II | 3 | X |  |  | X | Annual |  |
| BIOL-103  General Biology Lab I | 1 | X |  | X |  | Annual |  |
| BIOL-104  General Biology Lab II | 1 | X |  |  | X | Annual |  |
| **OR** |  |  |  |  |  |  |  |
| BIOL-121 Intro Biology I | 4 | X |  | X |  | Annual |  |
| BIOL-122 Intro Biology II | 4 | X |  |  | X | Annual |  |

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| **Required Course:** |  |  |  |  |  |  |  |
| BIOL-201- Cellular and Molecular Biology | 4 | X |  | X | X | Annual | BIOL-101, 102, 103 and 104; or BIOL-121, 122 |
| **Electives** |  |  |  |  |  |  |  |
| BIOL-204  Introduction to Microbiology | 4 |  | X | X |  | Biennial | BIOL-101, 102, 103 and 104; or BIOL-121, 122 |
| BIOL-218 Biology of Plants | 3 |  | X | X |  | Biennial | BIOL-101, 102, 103 and 104; or BIOL-121, 122 |
| BIOL-305  Plants, Medicine and Technology | 4 |  | X | X |  | Biennial | BIOL 201 |
| BIOL-306  Food Microbiology | 4 |  | X | X |  | Biennial | BIOL 204 |
| BIOL-307  Microbiology of wastewater | 3 |  | X |  | X | Biennial | BIOL-201 |
| BIOL-308  Biology of Cancer | 3 |  | X | X |  | Biennial | BIOL-201 |
| BIOL-310 Bioenergy: Microbial Production | 3 |  | X |  | X | Biennial | BIOL-204 |
| BIOL-314  Tissue Culture | 4 |  | X | X |  | Biennial | BIOL-201 |
| BIOL-321 Genetics | 3 |  | X | X | X | Annual | BIOL-201 |
| BIOL-322  Developmental Biology | 4 |  | X |  | X | Annual | BIOL-201 |
| BIOL-325  Bioinformatic Analysis of Macromolecules | 4 |  | X |  | X | Annual | BIOL-201 |
| BIOL-340  Genomics | 4 |  | X | X |  | Annual | BIOL-201 |
| BIOL-341  Synthetic Biology | 3 |  | X |  | X | Biennial | BIOL-201 |
| BIOL-375  Advanced Immunology | 4 |  | X |  | X | Annual | BIOL-201 |
| BIOL-380  Bioremediation | 3 |  | X |  | X | Biennial | BIOL-204 |
| BIOL-401  Biological Separations: Principles and Practices | 4 |  | X |  | X | Biennial | BIOL-321 and BIOL 325 |
| BIOL-403  Principles of Plant Biochemistry and Pathology | 4 |  | X | X |  | Biennial | BIOL-321 and BIOL 325 |
| BIOL-415  Virology | 3 |  | X |  | X | Biennial | BIOL-201 |
| BIOL-416  Plant Biotechnology | 4 |  | X |  |  | Biennial | BIOL-204, BIOL-321, BIOL-325 |
| BIOL-418  Plant Molecular Biology | 4 |  | X |  | X | Biennial | BIOL-201 |
| BIOL-420  Bacterial Host Interactions | 3 |  | X |  | X | Biennial | BIOL-321 |
| BIOL-450  Genetic Engineering | 5 |  | X |  | X | Annual | BIOL-201 |

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| --- | --- |
| Total credit hours: 15-17 |  |

**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. |

|  |  |
| --- | --- |
| Name of Minor in Semester Calendar: |  |
| Name of Minor in Quarter Calendar: |  |
| Name of Certifying Academic Unit: |  |

| **QUARTER: Current Minor Courses** | | | **SEMESTER: Converted Minor Courses** | | |  |
| --- | --- | --- | --- | --- | --- | --- |
| Course # | Course Title | QCH | Course # | Course Title | SCH | **Comments** |
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Policy Name: **D1.1 MINORS POLICY**

 1. Definition

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.

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.

In most cases, minors shall consist of a minimum of two upper division courses to provide reasonable breadth and depth within the minor.

2. Institutional parameters

1. Minors may be discipline-based or interdisciplinary;
2. Only matriculated students may enroll in a minor;
3. At least nine semester credit hours of the minor must consist of courses not required by the student's home program;
4. Students may pursue multiple minors.  A minimum of nine semester credit hours must be designated towards each minor; these courses may not be counted towards other minors;
5. The residency requirement for a minor is a minimum of nine semester credit hours consisting of RIT courses (excluding "X" graded courses);
6. Posting of the minor on the student's academic transcript requires a minimum GPA of 2.0 in each of the minor courses;
7. Minors may not be added to the student's academic record after the granting of the bachelor's degree.

3. Development/approval/administration processes

* 1. Minors may be developed by faculty at the departmental, inter-departmental, college, or inter-college level. As part of the minor development process:
     1. students ineligible for the proposed minor will be identified;
     2. prerequisites, if any, will be identified;
  2. Minor proposals must be approved by the appropriate academic unit(s) curriculum committee, and college curriculum committee(s), before being sent to the Inter-College Curriculum Committee (ICC) for final consideration and approval.
  3. The academic unit offering the minor (in the case of interdisciplinary minors, the designated college/department) is responsible for the following:
     1. enrolling students in the minor (as space permits);
     2. monitoring students progress toward completion of the minor;
     3. authorizing the recording of the minor's completion on student's academic records;
     4. granting of transfer credit, credit by exam, credit by experience, course substitutions, and advanced placement;
     5. responding to student requests for removal from the minor.
  4. 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.

4. Procedures for Minor revision

It is the duty of the college curriculum committee(s) involved with a minor to maintain the program’s structure and coherence.  Once a minor is approved by the ICC, changes to the minor that do not have a significant effect on its focus may be completed with the approval of the involved academic unit(s) and the college curriculum committee(s).  Significant changes in the focus of the minor must be approved by the appropriate academic unit(s) curriculum committee(s), the college curriculum committee(s) and be resubmitted to the ICC for final consideration and approval.