

Rochester INSTITUTE OF TECHNOLOGY

Minor Program proposal form

Golisano College Of Computing

and Information Sciences

**Department of Networking, Security, and Systems Administration**

**Name of Minor:** Networking and Systems Administration

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

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| The minor in networking and systems administration is comprised of a sequence of courses that will provide computing, telecommunications, or engineering students outside of the NSSA department with a firm foundation in networking and/or systems administration. Computer networks and the systems attached to these networks have become ubiquitous. Therefore knowledge of how computer networks work, their administration and the administration of the systems attached to them can be of value to every computing or data communications professional. |

**1.0 Minor Program Approvals**

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| --- | --- | --- |
|  | Approval request date: | Approval granted date: |
| Academic Unit Curriculum Committee | 3/7/12 | 3/13/12 |
| College Curriculum Committee | 3/13/12 | 3/20/12 |
| 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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| Networking, data communications, and computing platforms are an integral part of our corporate and personal environments. The technologies required to interconnect multiple computing devices of the same or different types is not only technical but becomes increasingly complex as the number of devices and device types scale up. We live in a world of both wired and wireless networks where users desire to move from one to another in a seamless fashion. Networking in this context refers to the design of complex networks that interconnect to provide this seamless communications for users on a wide variety of platforms. The three course network sequence in this minor will provide the students with knowledge of how these networks and network connected systems interoperate and therefore will provide an important foundation for all those disciplines that either use these networks for transport or those that design and create the hardware or software components that comprise these pervasive networks.  Systems administration refers to the design, customization, and ongoing operations of computing environments in support of the organizations and users that rely on them. This includes a wide variety of platforms and software systems which are integrated to provide the computing environment required to support the way organizations operate and the way individuals live, work, and play. Systems administration is also concerned with system security and the privacy of the information contained on all computing platforms. The two course sequence of scripting with an introduction to systems administration will provide students in this minor the opportunity to understand the basics of how to design and manage the support of this information-rich environment that serves individuals and organizations alike.  We live in a world of constant information flow from our smart phones to large central repositories of information which we draw on every day. This minor provides a view into the technologies that support the flow and delivery of that information to individuals and organizations alike. |

**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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| The courses are contained entirely within the department of Networking, Security, and Systems Administration. |

**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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| This minor may not be taken by students in the Networking and Systems Administration BS degree program or in the Information Security and Forensics BS degree program. Other exclusions will be based on the applicants prerequisite knowledge and course work. |

**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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| Students who are majoring in a computing program other than the BS in Information Security and Forensics or the BS in Networking and Systems Administration are uniquely situated to take advantage of this minor. Student pursuing this minor must complete the following prerequisite courses prior to taking any of the 200 level or higher courses in the minor:   1. A two course introductory programming sequence such as one of the following:  * CSCI 141 (Computer Science I) and CSCI 142 (Computer Science II) (the standard requirement) * ISTE 120 (Computational Problem Solving in the Information Domain I) and ISTE 121 (Computational Problem Solving in the Information Domain II) * ISTE 100 (Computational Problem Solving in the Network Domain I) and ISTE 101 (Computational Problem Solving in the Network Domain II) * IGME 105 (Game Software Development I) and IGME 106 (Game Software Development II) * CPET 121 (Computational Problem Solving I) and CPET 321 (Computational Problem Solving II) * Or an equivalent sequence as determined by the minor advisor  1. A computer systems fundamentals course such as Computer Systems Concepts (NSSA102) or equivalent as determined by the minor advisor.   The first course in the minor for all students may be taken prior to or at the same time as the prerequisites listed above. It is :   * NSSA Fundamentals ( NSSA-101)   Following the completion of NSSA Fundamentals and the prerequisite courses listed above the student can proceed to take one of the following two paths of study offered by the Department of Networking, Security, and Systems Administration:   1. **Networking Focus:**   Networking I ( NSSA-241)  Networking II (NSSA-242)  Networking Lab (NSSA-243)  VoIP and Unified Communications I (NSSA-341)   1. **Systems Administration focus:**   Introduction to Scripting (NSSA-220)  Systems Administration I (NSSA–221)  Systems Administration II (NSSA-322)  Systems Administration Lab( NSSA-323) |

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| Course Number & Title | SCH | Required | Optional | Fall | Spring | Annual/Biennial | Prerequisites |
| NSSA-101  NSSA Fundamentals | 3 | X - all |  | X | X | Annual | None |
| NSSA-241  Networking I | 3 | X – Track I |  | X | X | Annual | NSSA-102  or Equivalent |
| NSSA-242  Networking II | 3 | X – Track I |  | X | X | Annual | NSSA-241  Co-req: NSSA-243 |
| NSSA-243  Networking Lab | 3 | X – Track I |  | X | X | Annual | NSSA-241  Co-req: NSSA-242 |
| NSSA-341  VoIP & Unified Communications | 3 | X – Track I |  | X | X | Annual | NSSA-243 |
| NSSA-220  Introduction to Scripting | 3 | X – Track II |  | X | X | Annual | ISTE-101  or Equivalent |
| NSSA-221  Systems Administration I | 3 | X – Track II |  | X | X | Annual | NSSA-101 NSSA-220 |
| NSSA-322  Systems Administration II | 3 | X – Track II |  | X | X | Annual | NSSA-221  Co-req:  NSSA-323 |
| NSSA-323  Systems Administration Lab | 3 | X – Track II |  | X | X | Annual | NSSA-221  Co-req:  NSSA-322 |

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| Total credit hours: | 15 credits for track I or 15 credit hours for track II |

**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: | Networking and Systems Administration |
| Name of Minor in Quarter Calendar: | Networking and Systems Administration for Computing Majors |
| Name of Certifying Academic Unit: | Department of Networking, Security, and Systems Administration |

| **QUARTER: Current Minor Courses** | | | **SEMESTER: Converted Minor Courses** | | |  |
| --- | --- | --- | --- | --- | --- | --- |
| Course # | Course Title | QCH | Course # | Course Title | SCH | **Comments** |
| N/A | N/A | N/A | NSSA-101 | NSSA Fundamentals | 3 | This is a new course in semesters and has no equivalent in the quarter system. |
| 4050-351  4050-413  4050-515 | Network Fundamentals;  Application of Wireless Networks;  Introduction to Routing and Switching | 4 | NSSA-241 | Networking I | 3 | 4050-351, 4050-413, and 4050-515 were combined and reorganized to form the Networking I, Networking II, and Networking Lab courses. |
| 4050-351  4050-413  4050-515 | Network Fundamentals;  Application of Wireless Networks;  Introduction to Routing and Switching; | 4 | NSSA-242 | Networking II | 3 | 4050-351, 4050-413,and 4050-515 were combined and reorganized to form the Networking I, Networking II, and Networking Lab courses. |
| 4050-351  4050-413  4050-515 | Network Fundamentals;  Application of Wireless Networks;  Introduction to Routing and Switching; | 4 | NSSA- 243 | Networking Lab | 3 | 4050-351, 4050-413, and 4050-515 were combined and reorganized to form the Networking I, Networking II, and Networking Lab courses. |
| 4050-530 | Telephony Integration | 4 | NSSA-341 | VoIP & Unified Communications | 3 | This is a semester equivalent to 4050-530 |
| 4050-302 | Scripting in Perl | 4 | NSSA-220 | Introduction To Scripting | 3 | This is a semester equivalent to 4050-302 |
| 4050-  421  4050-422  4050-516 | System Administration I; System Administration II; Network Services | 4 | NSSA - 221 | System Administration I | 3 | 4050-421, 4050-422, and 4050-516 were combined and reorganized to form the System Administration I, System Administration II, and System Administration Lab courses. |
| 4050-  421  4050-422  4050-516 | System Administration I; System Administration II; Network Services | 4 | NSSA-322 | System Administration II | 3 | 4050-421, 4050-422, and 4050-516 were combined and reorganized to form the System Administration I, System Administration II, and System Administration Lab courses. |
| 4050-  421  4050-422  4050-516 | System Administration I; System Administration II; Network Services | 4 | NSSA-323 | System Administration Lab | 3 | 4050-421, 4050-422, and 4050-516 were combined and reorganized to form the System Administration I, System Administration II, and System Administration Lab courses. |

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.