R·I·T

OFFICE OF COOPERATIVE EDUCATION AND CAREER SERVICES

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APPLIED NETWORKING AND SYSTEM ADMINISTRATION

http://www.nssa.rit.edu

PROGRAM OVERVIEW FOR EMPLOYERS

The BS in Applied Networking and System Administration program prepares students for careers as architects, implementers, administrators and technical managers of computing networks, networked systems/components and software systems/components. This includes a focus on customer requirements and threats to the integrity of these systems and the software and data that uses them. Both of these serve to build to the students' ability to develop strategic plans and function as network and system project managers. Graduates of the program can evaluate existing networks and computing systems, monitor such systems for faults, and lead in the strategic planning to facilitate system improvement and growth. They will work in small - to large-scale companies since any place that computers and networks are employed will need graduates of this program. The program provides students with a level of specialization in this area beyond that provided by information systems or general information technology programs by focusing specifically on the network and computing systems and forsaking the application domains that such programs address. That is, the program favors depth over breadth, which allows it to focus on a greater level of detail in networking and system administration.

Degree(s) Awarded

Bachelor of Science

Enrollment

Approximately 300 students are enrolled in the Applied Networking and System Administration degree program.

Cooperative Education Component

BS students are required to complete at least three co-op work assignments. Co-op students are able to work 3 or 6 months.

Salary Information (Avg/Range)

Co-op:	$15.25	$8.00 - $29.00
BS:	$58,000	$49,700-$103,000

Equipment & Facilities

Over 300 computers for student use are distributed over five specialty labs. These labs include: the Networking Lab, the System Administration Labs, the Projects/Trouble Shooting Lab, the VoIP Lab, and the Systems/Network Security and Forensics Lab. Each of these facilities is fully equipped with high-end Windows and UNIX based PC platform computers.

The labs have a full array of networking equipment from a variety of vendors such as Cisco, Extreme Networks, and Nortel including hubs, over 100 switches, and more than 80 routers. In addition, the labs are also equipped with wireless access points (802.11a,b,g), layer 3 switches, as well as network simulation, network data capture and virtualization software. To complement these labs, the department provides twelve "Roll-Around racks equipped with twenty-four Extreme layer three switches and sixteen Cisco layer two switches and image servers which allow the students to save their work in progress as well as select from a wide variety of operating systems. The security lab includes a full assortment of Cisco and Checkpoint firewalls, IDS, Cisco VPN bundles, Cisco layer 3 switches, Cisco routers, Encase forensics software, and various other pieces of security related software. There are 14 other computing labs in the college to assist students in other areas of the curriculum. These labs include programming studios, database labs, multimedia labs, audio labs, as well as general purpose computing labs.

Accreditation

The Applied Networking and System Administration degree is accredited by the Computing Accreditation Commission of ABET (ABET/CAC).

Student Skills & Capabilities

End of the Second Academic Year:
Basic LAN construction with some trouble shooting. Simple router configuration. Understanding and deploying infrastructure protocols, including TCP/IP, PPP, RIP, STA, and Ethernet. Cable plant construction, verification and debugging. Scripting in Perl. Desktop support. Object-oriented application development using Java. Content development for the WWW. Direct experience in a variety of computing environments on multiple platforms, including Windows, MacOS, and Linux. Basic system administration functions, including account creation and management. Basic computer and network security awareness as well as use of basic security features of the technologies taught throughout the program.

During the Third and Fourth Academic Year:
Intermediate to advanced administration, including wired and wireless networks. Major infrastructure services, such as DHCP, DNS, LDAP, NFS, Samba, Active Directory. Intermediate routing and switching tasks involving OSPF, EIGRP, etc. End User requirements gathering, solution design and deployment.

Applied Networking and System Administration

Course Sequence BS degree

First and Second Years:
First Year Enrichment
Programming for Informational Technologists I, II, III
Introduction to Multimedia
Cyber Self Defense
Computer System Fundamentals
Network Fundamentals
Introduction to Unix
Scripting in Perl
Introduction to Routing and Switching
System Administration I
Introduction to Database and Data Modeling
Algebra & Trigonometry, Discrete Math I, II
Data Analysis
Science Electives
Liberal Arts Core

Third and Fourth Years:
Network Services
Applications of Wireless Data Networking
Needs Assessment
Advanced Track Courses I - V
Technology Transfer
Free Electives
General Education Electives
Liberal Arts Concentration
Cooperative Education (3 Quarters Required)

Summer quarter after the 2nd year is recommended for the first co-op block. In addition to co-op, the first two years of this plan includes all of the required math and science courses, most of the nine-course Liberal Arts core, and most of the Networking and System Administration core courses. Many alterations to this plan are possible. For example, some of the Liberal Arts core might be postponed in favor of electives. These electives could include courses from one or more tracks that a student might want to sample before co-op.

A typical quarter, then, will consist of one Networking and System Administration course, one Liberal Arts course, one math or science course, and a fourth course that depends on the quarter. The plan above is the generic default for the typical student. Since no one is really typical, students' schedules will likely look a little different.

After returning from the first co-op experience, the student will take the remaining Networking and System Administration core courses and plan their advance course selections. In addition, the student will select a Liberal Arts concentration or minor and will begin taking professional electives and general education electives. ANSA students will do their remaining co-ops the summer after their 3rd year and during one academic quarter of their 3rd year allowing them the flexibility to co-op for two three-month co-ops or one six-month co-op.

Employers of Applied Networking and System Administration Co-op and Graduating Students:

5LINX Enterprises Inc., Anheuser-Busch, Inc., Bekum America Corp., Blackrock, Boeing Co., Carestream Health, Cisco Systems, Credit Suisse, Dell SecureWorks, EarthLink, EMA Design Automation, EMC Corp., Fidelity Investments, General Dynamics Advanced Information Systems, Global Crossing Telecommunications Inc., GoDaddy, Gorbel, Info Directions, Inc., Innovative Solutions, Intel Corp, Intelsat, JPMorganChase, Liberty Mutual Insurance, LinkedIn, M&T Bank, MAP Digital, Inc., McGraw-Hill, Microsoft Corp., MIT Lincoln Laboratory, Monroe County, MSGI Corp., PAETEC, Paychex, PCC, Pitney Bowes, Progressive Insurance, Railcomm, Inc., Reed-Elsevier, Rochester City School District, SafeNet, SAIC, Sherwin Williams, Soleo Communications Inc., Standard & Poors Capital IQ, SunGard Higher Education, Susquehanna International Group, LLP, The Travelers Companies, Inc., Unisys Technical Services, US Dept. of the Treasury, US Air Force, US Army Research Laboratory, USAA (United States Automobile Assoc.), Verizon Wireless, Wegmans Food Markets, Xerox Corp.

Contact Us:

We appreciate your interest in hiring RIT co-ops, graduating students or alumni. We will make every effort to ensure your recruiting endeavor is a success. Call our office and ask to speak with Michelle Magee, the program coordinator who works with the Applied Networking and System Administration program. For your convenience, you can access information and services through our web site at http://www.rit.edu/recruit.

Michelle A. Magee
Program Coordinator
Office of Cooperative Education and Career Services
RIT . Bausch & Lomb Center . 57 Lomb Memorial Drive . Rochester NY 14623-5603
585.475.7824
mamoce@rit.edu