Rabb School of Continuing Studies
Division of Graduate Professional Studies

History and Organization

In 1992, the School of Summer and Continuing Studies was named the Rabb School of Continuing Studies in honor of Norman S. and Eleanor E. Rabb in recognition of over four decades of support for Brandeis. With three divisions—Graduate Professional Studies, the Summer School, and the Osher Lifelong Learning Institute at Brandeis—the Rabb School seeks to serve lifelong learners by supporting the university in its mission of providing open inquiry and outstanding teaching in a world of challenging social and technological transformation.

In 1997, the Division of Continuing Studies, now the Division of Graduate Professional Studies, was established in the Rabb School specifically to extend the opportunity for excellent, applied professional education at the graduate level to a more diverse, part-time, working-adult population. All degree programs in the division are professionally oriented, applied in nature (combining requisite theory with the practical application of learned material), and taught by expert adjunct faculty who are practitioners of their subject matter in their professional lives.

Degree programs at the master's and graduate certificate level are offered in the Division of Graduate Professional Studies of the Rabb School and are overseen by the Rabb School Council, made up of faculty representing the other schools in the university and chaired by a full-time faculty member. New degrees, as well as substantive changes to the curriculum, are reviewed for approval by the Rabb School Council and as necessary by both the Council of the Graduate Professional Schools and the Academic Affairs Committee of the Board of Trustees.

The Division of Graduate Professional Studies in the Rabb School currently offers four master's degree programs, requiring ten to twelve 3-credit courses, in applied fields:

Master of Software Engineering (est. 1997)

Master of Science in Bioinformatics (est. 2002)

Master of Science in Management of Projects and Programs (est. 2003)

Master of Science in Information Technology Management (est. 2005)

The division also offers credit-bearing graduate certificate programs of five, six, or seven courses, embedded in each of these degree areas. Further, the division offers an opportunity for students to take two degrees, sequentially, transferring up to three courses if appropriate from the first program.

Programs in the Division of Graduate Professional Studies have traditionally been offered on campus part-time in the evening, in three ten-week terms, year-round. Given the Rabb School's commitment to make graduate credit-bearing and professionally oriented academic resources at Brandeis available to as many qualified part-time students as possible, the division gradually expanded into distance learning (Web-supported learning), receiving the New England Association for Schools and Colleges' (NEASC) approval for its first online credential (Graduate Certificate in Software Engineering) in 2004. In 2006, two complete degrees, Master of Software Engineering and Master of Science in Information Technology Management, as well as an additional Graduate Certificate in Information Technology Management, are available entirely online and in the classroom. These last three online, credentialed programs are now also accredited by NEASC.

In addition, the division collaborates with corporate partners in offering credit-bearing courses to special student groups at corporate sites or welcoming corporate-sponsored students in on-campus or online courses. There are no degree programs offered at or (electronically) through sites other than the Brandeis campus.

Objectives

The Rabb School Division of Graduate Professional Studies offers excellent graduate academic programs for working professionals and provides a variety of distinctive niche programs that reflect current and future areas of study and occupation. The division provides a collegial community for part-time, professionally oriented, nonresident students.

The **Master of Software Engineering** prepares students to participate fully in integrated teams of software developers, software acquirers, and software end users. Students have the necessary software engineering skills and knowledge to ensure the delivery of reliable software to increasingly large, complex, and international end-user markets (available online and on campus).

The **Master of Science in Bioinformatics** brings together disciplines including biology, computer science, statistical data modeling, and information technology. Students must develop an understanding of and be able to contribute directly to the analysis of biological data, the design of databases for storage, retrieval, and representation of bio-molecular data, and the development of novel computational tools. Students' work will support better understandings of biological systems, human disease, and drug development, ultimately affecting the practice of modern medicine.

The **Master of Science in Management of Projects and Programs** provides current project managers and potential project managers with an integrated understanding of a broad scope of business functions at the upper-middle, team-leading level of corporate operations, combined with the technical skills and knowledge to analyze, organize, and manage the expression of projects, on time and on budget.

The **Master of Science in Information Technology Management** prepares students for knowledgeable leadership in the broadest scope of application of information technology. By understanding information technology's importance to an organization and its use in a global economy, students will acquire the skills and knowledge to direct the development and deployment of information systems of high quality (available online and on campus).

Admission

How to Apply

Admission policies and procedures for graduate degree and certificate programming in the Division of Graduate Professional Studies are described in detail on both the division Web site (www.brandeis.edu/rabbgrad) and in the *Student Handbook* located on the Web site. Standards of admission to all programs are clear, consistent, and simple. Applicants to graduate programs in the Rabb School generally hold bachelor's degrees from regionally accredited U.S. institutions or their equivalent. All formal applications for admission are evaluated by a faculty/staff committee. Applications and admission decisions are made on a rolling basis, with entry points at the beginning of each of the three standard ten-week terms (September, January, and May).

Brandeis undergraduate degree candidates are not eligible for application to programs in the Division of Graduate Professional Studies or registration in GPS courses for credit. While Brandeis graduate students from other units are eligible to register for GPS courses, they must pay full tuition for any course taken.

Academic Regulations

Academic Standing

Prior to filing a formal application, students may take up to four graduate courses, thereby determining whether commitment to both the chosen field and a master's degree program or graduate certificate is appropriate for them. It is standing policy that a course graded below B– may not be applied toward a graduate certificate or degree, regardless of when it is taken. Students are allowed a maximum of twelve courses to complete a ten-course master's degree, and a maximum of seven courses to complete a five-course graduate certificate program.

Given the part-time nature of all Rabb School programs, and recognizing that working people frequently encounter unanticipated life experiences, students may take up to five years to complete a ten- to twelve-course program. (Most students complete their degrees in less than three.)

Requirements for the Degrees

Detailed information about the requirements for the degree programs offered by the Rabb School, Division of Graduate Professional Studies, can be found in a later section of this *Bulletin*. Please refer to these pages for the requirements and expected learning outcomes for specific degrees. Specific course lists and requirements may be found at www.brandeis.edu/rabbgrad/students/programs.php

Auditing Courses

Auditing Rabb School courses is not permitted.

Change of Program

Courses may be dropped with modest financial penalty until the second meeting, after which students may drop courses until the ninth (of ten) meetings/online modules with no refund of tuition. Final course grades below B– may not be applied toward a graduate certificate or master's degree.

Incompletes

Incompletes are granted in exceptional cases, arranged between the student and the instructor and documented, including specific closure date, in the division's office. Unaddressed incompletes become failures after the established deadline.

Transfer of Credit

Rabb School degree candidates are not permitted to cross-register either in other graduate programs on campus or in programs elsewhere, although they may with advance approval take a course elsewhere and transfer it to the Rabb School. Up to two courses not previously counted for any degree program may be considered for transfer into a Rabb School degree, although not as either of the last two courses in the program. Very occasionally, a student may test out of a particular course, waiving that requirement but replacing it with an additional course from the program.

International Students

International student applicants to Rabb School's entirely part-time programs are required to submit their overseas academic credentials to an evaluator designated by the division, to declare and sign that they are in the United States legally, and to demonstrate via TOEFL or well-documented, successful professional employment in an English-speaking environment that they are proficient in the English language.

Fees and Expenses

Tuition and Expenses

The following tuition and fees are in effect for the 2007–2008 academic year. These figures are subject to annual revision by the Brandeis University Board of Trustees.

Payment of tuition occurs per course registration and must be completed in full in order for the registration to be official and for students to attend the first meeting of the class. Except under rare, prearranged circumstances, students not paid in full are not permitted to attend classes. Late registration is permitted on a space-available basis, between the first and second class meetings, and carries a late fee.

Registration fee: $50 (per term, regardless of number of courses)

Tuition per three-credit course: $2,025

Late registration fee: $60 (in addition to the fee above)

Other fees
Lab fee (dependent on course needs): $150

Course materials fee (dependent on course needs): $100

Application fee for admission to a degree or certificate program: $50

Application to graduate fee: $100

Refunds

All fees other than tuition (registration, lab, late registration, course material, and application fees) are nonrefundable after the first day of a term. Students who wish to cancel their registration and receive a tuition refund must state their intention to withdraw by completing a course add/drop form and submitting it to the Division of Graduate Professional Studies. Tuition will be refunded according to the following schedule.

Withdrawal before the first class meeting: 100%

Withdrawal before the second class meeting: 75%

No refund thereafter

Financial Aid

While the Rabb School of Continuing Studies offers no financial aid, students are able to participate in both publicly and privately funded student loan programs, based upon eligibility. Arrangements are made on an individual basis through the Associate Director, Admissions and Student Services, Division of Graduate Professional Studies.

Requirements for the Degree of Master of Software Engineering

Program of Study
The Degree of Master of Software Engineering requires one core course plus at least one choice from each of three core areas: programming, design and testing/quality control. It further requires six electives, totaling ten courses (30 credits). Specific courses may be found at www.brandeis.edu/rabbgrad/students/programs.php.

Learning Outcomes
Graduates are able to:

- Apply a systematic, disciplined, quantifiable approach to the cost-effective development, operation, and maintenance of software systems to the satisfaction of their beneficiaries, within some or all of the following areas of specialization: application development; database programming and management; network and Web security; Web development.
- Build solutions using different technologies, architectures, and life-cycle approaches, in the context of different organizational structures, with demonstrated programming expertise in a least one language among C, C++, Java, and VB.NET.
- Foster the development, adoption, and sustained use of standards of excellence for software engineering practices.
- Speak and write effectively, and think critically, about a wide range of issues arising in the context of working constructively on software projects.

Requirements for the Degree of Master of Science in Information Technology Management

Program of Study
The Degree of Master of Science in Information Technology Management requires six core courses and four electives, totaling ten courses (30 credits). Specific courses may be found at www.brandeis.edu/rabbgrad/students/programs.php.

Learning Outcomes
Graduates are able to:

- Develop and lead teams of technical people toward the achievement of established goals, and manage the development of their product.
- Identify the ways in which technology can be applied to solve both existing and anticipated problems.
- Leverage that technology to realize strategic management goals and opportunities.
- Assure the quality and value of information to those who ultimately use it for decision making.
- Think, write, and speak cogently and persuasively about ongoing and anticipated work with colleagues, end users, and corporate leadership, and listen carefully to feedback.

Requirements for the Degree of Master of Science in Project and Program Management

Program of Study
The Degree of Master of Science in Project and Program Management requires four core courses and six electives, totaling ten courses (30 credits). Specific courses may be found at www.brandeis.edu/rabbgrad/students/programs.php.

Learning Outcomes
Graduates are able to:

- Exercise management and leadership skills in the conduct of programs and projects that may be international in scope and present the challenges posed by acquisitions, mergers, and/or downsizing.
- Initiate, plan, execute, control, evaluate, and close out projects in a way that assures the delivery of the negotiated scope and quality level while meeting time and budget constraints.
- Understand and critically assess projects and programs in their larger corporate context and be able to communicate effectively the project/program status, issues, expectations, and risks, both orally and in writing, to senior management.

Requirements for the Degree of Master of Science in Bioinformatics

Program of Study
The Degree of Master of Science in Bioinformatics requires two foundation courses, three core courses, one advanced programming language, one scripting language, one database course, and four electives, totaling twelve courses (36 credits). Specific course lists may be found at www.brandeis.edu/rabbgrad/students/programs.php. (New program requirements will be effective January 2008. Please refer to the Web site for the most up-to-date requirements.)

Learning Outcomes
Graduates are able to:

- Gain and express a comprehensive understanding of biological systems: quantitative principles, information flow in biosystems, genome organization, protein function, metabolic pathways, and signaling cascades.
- Apply an array of skills in the analysis of gene and protein sequence data in the context of protein three-dimensional structure and high throughput genomic and proteomic data for pattern matching and model building.
- Leverage the computational and molecular biological expertise gained to foster productive communication among biologists, chemists, and computer scientists.
- Think critically and write and speak cogently and persuasively about ongoing and anticipated work, with colleagues, end users, and corporate leadership, and listen carefully to feedback.

Requirements for Sequential Master Degrees

Program of Study
Students must complete the first degree in its entirety. Transfer of up to three courses from the first to the second program is permitted (if appropriate). The student must fulfill any outstanding core requirements in the second degree, along with the requisite number of electives to total seventeen to twenty-two courses (51 to 66 credits, depending on programs).

Graduate Certificates

The credit-bearing graduate certificates embedded in each of the master's degree programs (involving five, six, or seven courses, depending upon field) share the same outcomes, but not the depth and breadth of subjects and general understanding offered in the degree programs. Specific courses and requirements may be found at www.brandeis.edu/rabbgrad/students/programs.php.

Courses of Instruction

Listed on the following pages are courses of instruction for the Rabb School of Continuing Studies, Division of Graduate Professional Studies. Courses meet for three hours a week unless otherwise specified. Courses offered online are presented in ten discrete weekly modules contemporaneous with the ten-week on-campus term.

Most courses are available to all students qualified to take them. Access to some courses is governed by the signature of the instructor. Other courses impose a numerical limit to preserve environmental conditions suitable to the pedagogy the instructor employs.

Generally, a course is offered with the frequency indicated at the end of its description. The frequency may be designated as every semester, every year, every second year, every third year, or every fourth year.

The university reserves the right to make any changes in the offerings without prior notice.

Courses of Instruction

RBIF 101 Protein Sequence and Structure Analysis
This course begins by building a foundation in protein structure which is then used as a basis for critically evaluating database search results and protein sequence alignments. Mass spectrometry as it relates to proteomics and structure-based drug discovery are covered as well. Each student will have an independent protein sequence to analyze and report upon at the end of the course. Usually offered every year.
Mr. Cheng and Mr. Caffrey

RBIF 102 Nucleic Acid Sequence Analysis and Genomics
This course begins by building a foundation in DNA and RNA structure and gene and chromosome architecture. This knowledge is then used as a basis for critically evaluating database search results and algorithms. Topics covered in this course include: RNA structure prediction, gene finding, genome assembly, micro array, SNP analysis. Usually offered every year.
Ms. Taylor

RBIF 103 Probability and Statistics
This course is an introduction to probability and statistics in the bioinformatics context. Topics covered include: probability theory with one and many random variables, classical and Bayesian methods, Poisson processes, and Markov chains and applications to sequence analysis, gene finding, and phylogenetics. Usually offered every year.
Mr. Partensky

RBIF 104 Biological Data Mining
The development of new bioinformatics tools typically involves some form of data modeling, prediction, or optimization. This course introduces various modeling and prediction techniques including linear and nonlinear regression, neural networks, support vector machines, self-organizing maps, and the use of randomization for simulation. Usually offered every year.
Staff

RBIF 105 Proteomics: Analytical and Computational Principles
Proteomics constitute the parallel characterization of the set of proteins from an organism's genome. High-throughput, parallel study of proteins is invaluable to the discovery of modern medicines. This course covers emerging analytical techniques for the study of proteomes, as well as the computational tools that support them. Usually offered every year.
Mr. Moutsatsos

RBIF 106 Drug Discovery and Development
There are high expectations for bioinformatics to contribute to drug discovery. This course explores issues faced during drug discovery and development. Topics include: target identification, target validation, structure-based drug discovery, high throughput screening, toxicity studies, pharmacology, and clinical trials. Students will work on a model discovery effort targeting trypanosomes. Usually offered every year.
Staff

RBIF 107 Python Programming for Bioinformatics
This course covers the Python computer scripting language with an emphasis on bioinformatics. Python is being adopted by bioinformaticians as a preferred scripting language because of its simplicity and object-oriented nature. Python's important features and methodologies are covered in this course, including syntax, semantics, libraries, and software environment. Usually offered every second year.
Staff

RBIF 108 Computational Systems Biology
This course aims at an integrative, system-level understanding of biological systems by analyzing quantities of experimental biological data using computational techniques such as model building. We will seek to study interacting systems by defining basic structures of the biological network in a living cell, how biological systems respond to changing conditions and maintain robustness and stability, and how we can make predictions based on our modeling results. Students will study various published results on systems-level computational biology and build their own models from publicly available data sets of their choice.
Staff

RBIF 120 Advanced Research Projects in Computational Biology
In this course, students are introduced to the basic techniques of bioinformatics research and its grounding principles in the scientific method in a weekly series of lectures. A committee of instructors will assist each student in the design and execution of an advanced research project in bioinformatics. Student projects will be required to incorporate programming and database-focused integration and management of empirical data. Student project focus should be taken from two or more approaches in: systems modeling, sequence analysis (genomics/proteomics), artificial intelligence/pattern detection, discrete mathematics and statistics, or phylogenetics.
Staff

RBIO 101 Molecular Biology Lab
This course covers modern molecular biology lab techniques. It is a highly interactive course including hands-on laboratory experiments covering such topics as cloning a gene, expressing and purifying a protein, isolating DNA, and learning how microarray data are generated and analyzed. It is intended for students who have had little or no experience in a biology lab. Usually offered every second year.
Staff

RBIO 102 Molecular, Cell, and Developmental Biology
Topics covered include the relationship of the cell and the genome, how cells read the genome: from DNA to protein, control of gene expression, internal organization of the cell, intracellular compartments and protein sorting, the cell cycle and programmed cell death, the mechanics of cell division, cell junctions, cell adhesion, and the extracellular matrix, development of multicellular organisms, cancer, the adaptive immune system, pathogens, infection, and innate immunity.
Staff

RCHE 101 General, Organic, and Biochemistry
This course introduces principles of general chemistry, organic chemistry, and biochemistry, with an emphasis on bioinformatics. Topics include general chemistry: matter, energy, and measurement, chemical bonds and reactions, reaction rates and equilibrium, acids and bases; organic chemistry: the functional groups; biochemistry: lipids, proteins, enzymes, nucleic acids, chemical communication, gene expression and protein synthesis, and immunochemistry. Usually offered every year.
Mr. Wynn and Mr. Pollastri

RCOM 102 Professional Communication
This course prepares professionals with communication skills necessary for success in their fields. Students will gain knowledge, skills, and competencies required for interpersonal, small-group, and public communication. Students will have extensive practice writing and speaking on a variety of informative and persuasive topics.
Staff

RMGT 110 Leadership, Team Building, and Decision Making
This course examines management and leadership issues within organizations. Integrating leadership theory and day-to-day practice with case discussion and field interviews, the course emphasizes personal strategies for developing leadership skills. This course explores emotional intelligence, mentoring, team building, communication skills, relationship building, growing people, and decision making. Usually offered every year.
Ms. Phillips or Mr. Holberton

RMGT 112 Strategic Information Technology Management
This course examines the relationship between the organization and information technology and its extensions for the innovative and strategic management paradigms of the future. Focusing on the role of managers within an organization, the course examines the development of computer-based information systems to support an organization's objectives and strategic plans. The course will include discussions of information technology applications including ERP systems, groupware, data warehousing, data mining, intranets, and Web-based electronic commerce. The course will strive to increase students' awareness of the social impact of information systems and urge students to consider the new roles that IT plays in organizations and society.
Staff

RMGT 115 Knowledge Management
This course examines the relationship between knowledge management and information technology and its extensions for the innovative and strategic management paradigms of the future. The central message of the course is that knowledge, not money or technology, will be the primary economic unit of business in the twenty-first century. Usually offered every year.
Ms. Phillips

RMGT 175 IT Security and Compliance
This course in information assurance will allow students to obtain key bodies of knowledge and specializations in security, privacy, and compliance associated with information systems. Students will acquire an understanding of various technologies in emerging areas of information assurance like computer and network security, digital forensics, cryptography, and biometrics. Course topics will include cost/risk tradeoffs, and technical, physical, and administrative methods of providing security and compliance. Current privacy legislation and technical means of providing privacy and IT compliance will also be covered. Students will be able to immediately apply their knowledge to manage the risk of security attacks and implement appropriate compliance policies and strategies.
Staff

RPGM 2 Introduction to Programming in Java
The course objective is to introduce fundamental syntax and semantics of Java, with special focus on data types, objects, loops, expressions, class methods, class hierarchies, and graphics. Students will become familiar with the fundamental syntax and semantics of Java, with the initial focus on data types, control structures, loops, arrays. The course will then introduce object-oriented concepts of classes, objects, inheritance, polymorphism, abstract classes, and abstract methods. The students will learn to instantiate and use Java build-in classes, and create their own classes and class hierarchies. At the end of the course the students will also learn the basics of GUI programming and will be able to write and run their own Java applets.
Staff

RPJM 10 Microsoft Project for Project Management Professionals
This noncredit course is intended to provide students with an understanding of both fundamental and practical approaches to the use of Microsoft Project to manage both individual and multiple projects. The components of Microsoft Project that effectively meet the needs of the five fundamental phases of the project-management life cycle will be discussed, demonstrated, and illustrated. Usually offered every year.
Mr. Parker

RPJM 101 Foundations of Project Management
This course will provide the student with an understanding of the history, current practice, and future directions of project management. Principles and concepts of project management will be presented and discussed within the context of the knowledge areas and process groups defined in the Project Management Body of Knowledge (PMBOK).
Staff

RPJM 102 Business Perspectives for Project Managers
Understanding the language of accounting and financial information is important for all program and project managers. This course is designed to introduce students to the underlying concepts regarding the preparation and consequences of the information being used in program and project management. The course will focus on the role, use, and application of financial techniques in managerial decision making. Usually offered every year.
Mr. Sherman

RPJM 103 Advanced Scheduling and Control
This course shows how to employ scheduling and resourcing techniques on a multiproject basis to generate the maximum value across the portfolio. Drawing upon the disciplines of operations management and controls, this course will devote a significant amount of time to the development, implementation, execution, and control of a detailed project plan, performed by teams of students.
Staff

RPJM 110 Risk Management in Projects and Programs
This course will provide the student with a thorough understanding of risk management: a systematic, iterative approach that encompasses risk planning, identification, qualitative analysis, quantitative analysis, response planning, and monitoring and control. Applications to industry projects will be stressed as students build a risk management toolkit and uncover methods to implement risk-management programs successfully. Usually offered every year.
Ms. Marando or Mr. Stewart

RPJM 113 Negotiating and Conflict Resolution
Negotiations occur to resolve a conflict of interest between two or more parties. This course will explore characteristics of a negotiation situation, interdependence in negotiation, value creation differences, levels of conflict, and major strategies for conflict management. Each conflict management strategy has its advantages and disadvantages and is more or less appropriate given the type of conflict and situation in which the dispute occurs. Exercises and case analysis are used to illustrate important concepts.
Staff

RPJM 114 Managing Projects across Cultures and Geographies
Using concepts and methodologies from cultural anthropology and project management, this course will provide students with a framework for identifying, describing, and comparing cultural knowledge that is relevant to project management. Students will learn how to anticipate and recognize cultural misunderstanding and how to take specific steps toward dealing with cross-cultural dynamics. Usually offered every year.
Ms. Todd

RPJM 117 Program Management: Theory and Practice
This course will provide the student with an understanding of the history, current practice, and future directions of program management. Principles and concepts of program management will be presented and discussed within the context of the knowledge areas and process groups defined in the PMBOK. Through readings, lectures, discussions, and extensive use of case studies, the student will become familiar with program management theory and techniques and learn how to apply them to real situations.
Staff

RPJM 118 Procurement and Contract Management
This course will cover in depth the procurement process in its entirety, including concepts, principles and ethics, pricing methods, awards, and all phases of contract administration. It will include development of bids and requests for proposals, evaluation of responses, and the capabilities and use of various types of contracts and pricing mechanisms. Usually offered every year.
Mr. Gentile

RPJM 119 Winning at New-Product Development
This course focuses on the elements of a world-class new-product development process backed by real-world examples and case analysis. This program will provide you with an overview of the best practice tools and techniques required by the new-product development team. The program will include: product development process (concept development, strategy, and testing), customer-centric product development (identifying needs, selecting solutions), global product development (global strategies, markets, and culture), product portfolio/project planning (allocation of resources, project mix, and priority), best practices (company discipline, creating the portfolio, learning cycle), project postoperations review/ lessons learned.
Staff

RPJM 120 Project Management Capstone
This course develops an integrated understanding of overall program and project management practices and techniques. Students will complete a capstone project, which will require students to integrate and apply the knowledge and skills acquired in their course work to evaluate the project management practices in an organization and undertake a research project in support of an organizational goal or to explore current developments within the profession at the graduate level.
Staff

RSEG 102 Advanced Programming in Java
This course explores advanced topics of Java programming language: object-oriented programming, collection framework, exception handling, and Java event model. Swing graphical user interface components, Java multithreading, files and streams, Java networking, and J2SE 5.0 New Java features are also covered in this course. Usually offered every year.
Mr. Yurik

RSEG 103 Advanced Programming in C++
This course provides a solid foundation of C++ with focus on object-oriented concepts and programming techniques. Emphasis is placed on classes, objects, abstract data types, inheritance, polymorphism, and templates. All of the C++ language constructs are covered in the course.
Staff

RSEG 104 Advanced Programming in VB.NET
This course presents in-depth analysis of Microsoft.Net architecture, concentrating on advanced features provided by the VisualBasic.NET programming environment. We concentrate on architectural issues and how to implement them in real-world distributed applications. Students learn techniques for building a modern multitier application. Usually offered every year.
Mr. Zilbermints

RSEG 105 Advanced Programming in Java (Level 2)
This course will present the following advanced topics of the Java 2 Enterprise Edition: Java database connectivity (JDBC), Java Beans, Servlets, Java Server Pages (JSP), custom tags, Jakarta Struts, Enterprise Java Beans (EJB), Web services, and Java 2 Enterprise Applications.
Staff

RSEG 107 Perl Programming
This course covers Perl's invocation, basic syntax, regular expression parser, lists, hashes, filehandles, built-in functions, and control-flow mechanisms. Students will be introduced to Perl's references and modules, which support complex data structures. Applications will include writing CGI scripts and using Perl to access an SQL database. Usually offered every year.
Mr. Hemdal

RSEG 108 Advanced C Programming for UNIX/Linux
This course is intended to provide an accelerated survey of C programming, with an eye to provide students with the knowledge they need to explore and practice using the SUS/POSIX system interfaces for programming on UNIX/Linux systems. This course will then build on this foundation to explore techniques for application of the UNIX system interfaces.
Staff

RSEG 109 Object-Oriented Design
This course focuses on unified modeling language (UML) object-oriented methodology, covering classes and object diagrams, data abstraction, inheritance, use cases, behavioral modeling, polymorphism, and information hiding. Other areas of study include object-oriented programming languages, as well as the life cycle and maintenance of object-oriented applications. Usually offered every year.
Ms. Yurik

RSEG 110 UNIX Tools
This course is an introduction to several UNIX tools and techniques: common commands, shells and shell programming, regular expressions, sed, awk, cron, make, and a skimming of Perl. Comparisons to Windows will be used to illustrate similarities and differences and to illuminate the UNIX system. This is a lecture course, supported by live demonstrations. The course includes weekly homework assignments, a midterm, and final exams. All exams are take-home.
Staff

RSEG 113 Advanced Programming in C++ (Level 2)
This course focuses on advanced features of C++ needed to produce high-quality C++ code on large development projects. A variety of C++ design patterns and proven idioms are discussed, including Standard C++ Library and Standard Template Library (STL) classes. Best programming techniques discuss issues of reusability, robustness, efficiency, and memory usage. Usually offered every year.
Ms. Yurik

RSEG 120 Software Development Methodologies
This course is designed to give students who have a basic familiarity with programming and modern computing systems a deeper understanding of such topics as requirements engineering, architectural design, dependable systems development, and process improvement. The course is presented in a combination of lectures, discussion forums, and chat sessions to build and refine skills necessary to work effectively in today's information age organizations. Students will design a software project throughout the duration of the course.
Staff

RSEG 125 Foundations of Software Quality Assurance
This course covers a broad range of topics related to software quality assurance (SQA). The course will explore combined application of a variety of SQA components, including SQA activities typically performed by external participants; extension of SQA activities to project schedules and budget control; SQA implementation issues; SQA risk management considerations; and costs associated with SQA. Usually offered every year.
Mr. Raben

RSEG 131 Software Testing Techniques
This course covers a broad range of topics related to software testing techniques. The course provides an introduction to testing consumer and business software under normal business conditions. Software projects are often characterized by a budget that is too small, a staff that is too small, and a deadline that is too soon. This course demonstrates how to achieve the best testing results possible under these difficult circumstances.
Staff

RSEG 135 Software Test Process Evaluation and Improvement
This course offers practical tools and procedures for improving the software testing processes in organizations. Topics include test strategy, test project estimation and planning, test specification techniques, test environment staging, test metrics, test process management, defect management, test process communication, test automation, testware management, testing involvement, and test personnel availability. Usually offered every year.
Mr. Raben

RSEG 145 Linux Administration
This course introduces students to the tasks, challenges, and philosophies behind Linux system administration using the Fedora Core distribution. This course presents Linux administration both as a subject of value in its own right and as an accessible starting point to study UNIX administration in general. This is a hands-on lab course covering the following topics: Linux installation, managing network connections, modems, printers, day-to-day tasks, managing disk space, backup and recovery, e-mail and Web services, security issues with Linux, system performance monitoring, disaster preparedness, and special topics based on student interest.
Staff

RSEG 151 XML and Related Languages
This course surveys the open standards that are making data representations and documents interchangeable, searchable, dynamic, and customizable. Students will learn how to design application-specific markup grammars using XML rules; how to validate the XML files; how to transform them; and how to parse XML documents. Usually offered every year.
Mr. Malkenson

RSEG 152 Programming ASP.NET and AJAX with C#
This course is designed to teach you how to create Web applications using the latest Microsoft technologies: ASP.NET 2.0, Visual Studio 2005, C#, and Ajax. Along the way you will learn about interacting with data, personalizing your site, the requirements of professional software development, and optimizing your use of the tools provided by Microsoft. We will also explore some of the limitations in .NET 2005 and take a glimpse at the future of software development in the Microsoft world.
Staff

RSEG 160 Computer Networks and Data Communications
This course focuses on the transport of multimedia information among distributed computer systems. We examine how modern communication protocols satisfy the differing requirements of the services that generate and use multimedia information. We use the Internet and private corporate networks as examples.
Staff

RSEG 161 Web Development Technologies
The course provides an overview of client and server-side technologies used in developing Web applications. On the client side, students learn to create attractive and well-functioning Web pages using XHTML, tables and forms, cascading style sheets, and JavaScript. Server-side Web development focuses on Web development with servlets and JSP, and on accessing a database in a Web application. Usually offered every year.
Mr. Yurik

RSEG 167 Service-Oriented Architecture: Distributed Enterprise Computing
This course focuses on architecture, organization, and lessons drawn from real-world examples. The student will learn how IT architecture is the technical enabler for an SOA and how the IT architecture and the business organization are mutually dependent. The major topics covered include identifying services, assigning appropriate service types, and allocating ownership of data to services. Consideration is given to the design of a functional infrastructure for business processes and how to achieve process integrity, approach heterogeneity, and initiate the technical infrastructure. The student will develop an understanding of the benefits of SOA to various enterprise stakeholders, the cost savings and effectiveness of SOA, the technical and organizational processes necessary to succeed in SOA, and the value of adding SOA to an enterprise's IT strategy.
Staff

RSEG 168 Architecture for Business and E-Commerce
This course studies business, e-commerce, and enterprise applications from architecture, design, and development methodologies perspectives. A combination of lectures and projects will familiarize students with multitier and enterprise application architecture, service-oriented architecture, architectural layers, usability issues, and data architecture. Object-oriented, client/server, and e-commerce models for business applications will be explored. The course will also cover business e-commerce technologies: Web portals, mobile commerce, Web site usability and design considerations, marketing on the Web, business-to-business e-commerce, e-security, and e-payments.
Staff

RSEG 169 Database Programming Fundamentals
This course provides students with a thorough introduction to relational database concepts via the structured query language (SQL). Through a hands-on approach, the course provides a solid founding in SQL terms, concepts, and statements, as well as introducing embedded SQL and JDBC interfaces. Usually offered every year.
Mr. Russo or Mr. Gibson

RSEG 170 Database Management
This course provides students with a thorough introduction to data modeling; relational, object-oriented, and object-relational database design concepts and issues. The design emphasis will be explored through a combination of team and individual projects as well as exposure to hands-on database implementations.
Staff

RSEG 171 Data Warehousing and Data Mining
This course explores the issues of distributed databases, data warehousing, and data mining. In addition, the course will introduce students to specialized database systems that show signs of future growth.
Mr. Gibson

RSEG 172 Network Security
This course will provide an overview of network security principles and practices. Through a combination of lecture and hands-on activities, students will gain an understanding of firewalls, intrusion detection systems, host-based security principles, and security tools such as network scanners.
Staff

RSEG 173 TCP/IP
This course is an in-depth study of the TCP/IP Internet Protocol Suite. It compares the suite to the OSI reference model and describes the workings of a number of applications such as FTP, Telnet, TFTP, DNS, and DHCP, HTTP and IP Security (IPSec), and Voice-Over IP (VOIP). Usually offered every year.
Mr. Marin

RSEG 180 Windows Programming with C#
This is a programming course that will teach you how to develop Windows applications using the C# (pronounced "C sharp") programming language. You will learn the new Microsoft .NET environment for developing and running software applications, featuring ease of development of Web-based services, rich standard run-time services available to components written in a variety of programming languages, and interlanguage and intermachine interoperability.
Staff

RSEG 290 Special Topics
Special topics courses are offered each semester. Please see *Schedule of Classes* for specific topics offered.
Staff