Data Structures/Program Development (CSCI070 HM)
1:15-2:30 p.m. | Shanahan Center B442 | Professor Christopher Stone
Abstract data types including priority queues and dynamic dictionaries and efficient data structures for these data types, including heaps, self-balancing trees and hash tables. Analysis of data structures including worst-case, average-case and amortized analysis. Storage allocation and reclamation. Extensionary storage considerations. Extensive practice building programs for a variety of applications.

Computer Systems (CSCI105 HM)
1:15-2:30 p.m., 2:45-4:00 p.m. | Shanahan Center 2460
Professor Beth Trushkowsky
An introduction to computer systems. In particular the course investigates data representations, machine level representations of programs, processor architecture, program optimizations, the memory hierarchy, linking, exceptional control flow (exceptions, interrupts, processes and Unix signals), performance measurement, virtual memory, system-level I/O and basic concurrent programming.

Software Development (CSCI121 HM)
1:15-2:30 p.m., 2:45-4:00 p.m. | Shanahan Center 3481
Professor Elizabeth Sweeney
Introduction to the discipline concerned with the design and implementation of software systems. The course presents a historical perspective on software development practice and explores modern, agile techniques for eliciting software requirements, designing and implementing software architecture and modules, robust testing practices, and project management. Student teams design, develop and test a substantial software project.

Scientific Computing (CSCI144 HM)
4:15-5:30 p.m. | Shanahan Center B442 | Professor Ali Nadim
Computational techniques applied to problems in the sciences and engineering. Modeling of physical problems, computer implementation, analysis of results; use of mathematical software; numerical methods chosen from: solutions of linear and nonlinear algebraic equations, solutions of ordinary and partial differential equations, finite elements, linear programming, optimization algorithms and Fast Fourier transforms.

Discrete Mathematics (MATH055 HM)
1:15-2:30 p.m., 2:45-4:00 p.m., 4:15-5:30 p.m. | Shanahan Center B442 | Professor Lisette de Pillis
This course is a rigorous analysis of the real numbers, and an introduction to writing and communicating mathematics well. Topics include properties of the rational and the real number fields, the least upper bound property, induction, countable sets, metric spaces, limit points, compactness, connectedness, careful treatment of sequences and series, functions, differentiation and the mean value theorem, and an introduction to sequences of functions.

Advanced Rocketry/Special Topics in Engineering (ENGR190AJHM)
1:15-2:30 p.m. | Shanahan Center 3421 | Professor Erik Spjut
The course will delve into four of the following rocketry topics in some detail: Flight dynamics and modeling. Dynamic equations of motion. Structural dynamics and modeling. Avionics, Telemetry. Sensors and signal conditioning, Kalman filtering and signal processing. Risk and reliability, Propulsion. The course will terminate with a six-week project where students will construct, model, and fly rockets into the supersonic region.

Chemical & Thermal Processes (ENGR082 HM)
2:45-4:00 p.m. | Shanahan Center 2454 | Professor Anthony Bright
The basic elements of thermal and chemical processes, including: state variables, open and closed systems, and mass balance; energy balance, First Law of Thermodynamics for reactive and non-reactive systems; entropy balance, Second Law of Thermodynamics, thermodynamic cycles and efficiency.
Ecology & Environmental Biology (BIOL108 HM)
9-9:50 a.m.  |  Shanahan Center 2421  |  Professor Stephen Adolph
Principles of organization of natural communities and ecosystems, including population dynamics, species interactions and island biogeography. Modern experimental and mathematical approaches to ecological problems. Application of ecological principles to conservation biology, human demography and harvesting of natural resources.

Introduction to Biology (BIOL052 HM)
10-10:50 a.m., 11-11:50 a.m.  |  Shanahan Center 2450/2460  |  Professor Eliot Bush
Genes, genomes and human health: topics in evolution, molecular genetics, and computational biology.

Introduction to Biology (BIOL052 HM)
10-10:50 a.m., 11-11:50 a.m.  |  Shanahan Center 2454  |  Professor Matina Donaldson-Matasci
Genes, genomes and human health: topics in evolution, molecular genetics, and computational biology.

Introduction to Biology (BIOL052 HM)
10-10:50 a.m., 11-11:50 a.m.  |  Shanahan Center 2475  |  Professor Erika Danae Schulz
Genes, genomes and human health: topics in evolution, molecular genetics, and computational biology.

Group Theory/Quant Chem/Spectroscopy (CHEM052 HM)
9-9:50 a.m.  |  Shanahan Center 3465  |  Professor Robert Cave
Chemical group theory. Introduction to quantum mechanics with application to atoms and molecules. Applications of group theory and quantum mechanics to spectroscopy.

Inorganic Chemistry (CHEM104 HM)
9-9:50 a.m.  |  Shanahan Center 2407  |  Professor Adam Johnson
Systematic study of the preparation, properties, structures, analysis and reactions of inorganic compounds.

Carbon Compounds (CHEM056 HM)
10-10:50 a.m.  |  Shanahan Center 3460  |  Professor William Daub
A systematic study of the chemistry of carbon-containing compounds, emphasizing synthesis, reaction mechanisms, and the relation of structure to observable physical and chemical properties.

Advanced Analytical Chemistry (CHEM114 HM)
10-10:50 a.m.  |  Shanahan Center 2407  |  Professor Lelia Hawkins
Fundamentals of modern instrumental design, application, and usage with an emphasis on the underlying principles of operation. Chemometrics.

Operations Research (ENGR187 HM)
11-12:15 p.m.  |  Honnold/Mudd Library M234  |  Professor Susan Martonosi
Linear, integer, non-linear and dynamic programming, classical optimization problems, and network theory.

Intro to Linear Algebra (MATH040 HM)
8-8:50 a.m., 9-9:50 a.m.  |  Shanahan Center 1430  |  Professor Francis Su
Theory and applications of linearity, including vectors, matrices, systems of linear equations, dot and cross products, determinants, linear transformations in Euclidean space, linear independence, bases, eigenvalues, eigenvectors, and diagonalization.

Number Theory (MATH175 HM)
11-11:50 a.m.  |  Shanahan Center 2440  |  Professor Arthur Benjamin
Properties of integers, congruences, Diophantine problems, quadratic reciprocity, number theoretic functions, primes.

Quantum Physics (PHYS052 HM)
11-11:50 a.m.  |  Shanahan Center 3481  |  Professor Ann Esin, Professor John Townsend
The development and formulation of quantum mechanics, and the application of quantum mechanics to topics in atomic, solid state, nuclear and particle physics.