**CS 100 Introduction to CS and Engineering**

This subject is aimed at students with **little or no programming experience**. It aims to provide students with an understanding of the role computation can play in solving problems. It also aims to help students, regardless of their major, to feel justifiably confident of their ability to write small programs that allow them to accomplish useful goals. The class will use the Python programming language.  
(<http://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-00sc-introduction-to-computer-science-and-programming-spring-2011/index.htm>)

**Introduction to Engineering**

Introduces students to the profession, including the disciplines of chemical, civil, computer, electrical, environmental, and mechanical engineering. Prepares students for success through the integration of the following important skills: technical problem solving and engineering design, ethical decision-making, teamwork, and communicating to diverse audiences.

(<http://www.ce.udel.edu/courses/EGGG101/EGGG%20101%20Syllabus.pdf>)

**Compilation of above two descriptions:**

First part of the course introduces students to the profession, including the disciplines of chemical, civil, computer, electrical, environmental, and mechanical engineering. Prepares students for success through the integration of the following important skills: technical problem solving and engineering design, ethical decision-making, teamwork, and communicating to diverse audiences. Second part is aimed at students with **little or no programming experience**. It aims to provide students with an understanding of the role computation can play in solving problems. It also aims to help students, regardless of their major, to feel justifiably confident of their ability to write small programs that allow them to accomplish useful goals. The class will use the Python programming language.

**CS 404 Systems Programming - introduction**

System Programming concerns the development of software components and methods for their combination, independent of any particular application. This course will provide information and experience required to understand, design and implement components of large software systems.

In general, students should be able to evaluate design alternatives according to standard practice, specifications, performance analysis, robustness, etc. To concentrate attention, we investigate one system and one programming language in detail, through demonstration programs, short- and long-term programming assignments. The specific system is Unix, a family of operating systems forming a complete standardized programming environment based on the idea of software tools. The specific language is C, which is widely used for operating system implementations, and which forms the basis for the C++ and Java languages studied in the prerequisite courses. This will help students understand operating system services available to application programmers, and provide a firm ground for study of operating systems in general.

<http://bulletins.psu.edu/bulletins/bluebook/university_course_descriptions.cfm?letter=C&courselong=CMPSC|311|200708SP>

CS 107: Physics 1 - Mechanics

Introductory physics course, geared towards engineering majors. Equilibrium and motion of particles in one and two dimensions in the framework of Newtonian mechanics, force laws (including gravity), energy, momentum, rotational motion, conservation laws, and fluids. Examples will be drawn from astronomy, biology, sports, and current events. **Prerequisites:** Mathematics

<http://www.ucsd.edu/catalog/courses/PHYS.html>

CS 108: Physics 2 - Electricity and Magnetism

Introductory physics course geared toward engineering majors. Electric fields, magnetic fields, DC and AC circuitry.

<http://www.ucsd.edu/catalog/courses/PHYS.html>

Electricity and Magnetism should provide instruction in each of the following five content areas: electrostatics; conductors, capacitors and dielectrics; electric circuits; magnetic fields; and electromagnetism

<http://media.collegeboard.com/digitalServices/pdf/ap/ap-physics-c-course-description.pdf>

Composite: Introductory physics course geared toward engineering majors. Electricity and Magnetism should provide instruction in each of the following five content areas: electrostatics; conductors, capacitors and dielectrics; electric circuits; Electric & magnetic fields; and electromagnetism, DC and AC circuitry.

CS 105: Calculus 1

CS 105 is a first course in the calculus of one variable intended for computer science, industrial engineering, industrial electronics and applied mathematics students. It is open to others who are qualified and desire a more rigorous mathematics course at the core level.

Topics include a brief review of polynomials, trigonometric, exponential, and logarithmic functions, followed by discussion of limits, derivatives, and applications of differential calculus to real-world problem areas. An introduction to integration concludes the course.

<http://www.bc.edu/schools/cas/math/courses/calc.html>

CS 106: Calculus 2

CS 106 is a second course in the calculus of one variable intended for computer science, industrial engineering, industrial electronics and applied mathematics students. It is open to others who are qualified and desire a more rigorous mathematics course at the core level.

Topics include an overview of integration, basic techniques for integration, a variety of applications of integration, and an introduction to (systems of) differential equations.

<http://www.bc.edu/schools/cas/math/courses/calc.html>