Course Descriptions for all ENGINEERING courses
(in order by semester)

CHEM 120 General Chemistry I (Cr4) (3:3)
Chemistry I is a qualitative and quantitative study, both in the classroom and the laboratory, of matter and energy as they relate to the chemical properties of solids, liquids, gases, and solutions. Topics include stoichiometry, atomic/molecular structure, bonding, states of matter, changes of state, and solutions. A quantitative study of each area is stressed; a strong background in chemistry and mathematics is required. This course is intended for science and engineering majors. Prereq. - Appropriate competence as outlined in the Mathematics Placement Policy or MATH 022; Chemistry (1 year of high school chemistry or CHEM 011); and Reading and writing competence as determined for ENGL 101. Core: SCI.

CMTH 102 Speech Communication (Cr3) (3:0)
Basic principles of communication theory and practice, including speech preparation and delivery, and the effective use of critical thinking and listening in relation to intrapersonal, interpersonal, intercultural, and group communication.

ENGL 101 English I (Cr3) (3:0)
A writing-intensive course giving close attention to the process of writing through networked workshops and conferences involved in preparation and revision of drafts. The course develops skills in logical and focused writing, through development of a main point by means of supporting ideas and evidence. In addition, students learn to integrate information from secondary sources through the use of summary, paraphrase, and direct quotation in various forms of thesis-based writing. Prereq. - Competence in reading and writing as determined by English Department through testing and/or course work. Approved for the Honors Program.

MATH 180 Calculus I (Cr4) (4:0)
Limits of functions, derivatives, chain rule, implicit differentiation, extrema, indefinite and definite integration; Fundamental Theorem of Calculus, transcendental functions and applications. Prereq. - Appropriate competence as outlined in the Mathematics Placement policy or MATH145 or 160 either with a C or better.

CISC 115 Computer Science I (Cr4) (4:0)
Introduction to computing through the development of algorithms and programs which are implemented in a high level function/object oriented language; simple data types, control structures, documentation, basic file manipulation, problem solving techniques, modular design, structured data types, and object oriented implementations. Prereq. - Appropriate competence as outlined in the Mathematics Placement Policy, or MATH 026 or 028 either with a C or better.

ENGL 151 English II (Cr3) (3:0)
Students continue to develop the academic writing and critical reading skills begun in English I. Students may elect to work on introduction to literature (L), report writing (R), or technical writing (T). Prereq.: ENGL 101. Also available through Online Learning. ENGL 151L (literature option) is approved for the Honors Program and has a designated as a Diversity (D) core course.
MATH 181 Calculus II (Cr4) (4:0)
Techniques and applications of integration, L'Hopital's Rule, improper integrals, solving differential equations using separation of variables, sequences and series, conics, parametric equations and polar coordinates. Prereq. - MATH 176 or 180 either with C or better, or score of 4 or 5 on AP Calculus AB or BC test. Core: QL.

PHYS 225 Physics for Science and Engineering II (Cr5) (4:3)
This is the follow-on physics course to PHYS 215 (Physics for Science & Engineering I), and is an engineering and scientist level, calculus-based, problem-solving physics course with lab component. Topics covered are vibrations and waves, sound, electric charge and electric fields, circuits, magnetism, electromagnetic waves, light, optics and modern physics (quantum, atomic, relativity). Prereq. - PHYS215 with C or better; Pre- or Coreq. - MATH210. Core: SCI

MATH 211 Differential Equations (Cr4) (4:0)
This is an introductory course to Ordinary Differential Equations (ODE), their solutions and applications. Some of the topics to study: solving differential equations by separations of variable, substitutions methods, numerical methods, exact differential equations, differential equations of higher order, linear system of differential equations, Laplace transform methods, power series, linear systems, matrices, vector space, eigenvalues and eigenvectors. Prereq. - MATH 210 with C or better. Core: QL.