ENGR1000  INTRODUCTION TO ENGINEERING
This course develops the skills needed during the students study of engineering. Topics include task/time management, effective use of notes, engineering research, oral and written communications, problem-solving techniques, ethics and professional responsibility and Institute resources. In the laboratory, students work in teams to complete a variety of engineering tasks. (3 credits)

ENGR1500  INTRODUCTION TO ENGINEERING DESIGN
This course is an externally collaborative project based interdisciplinary design course, introducing students to the fundamentals of engineering design and professional practices. Students learn about the design cycle and the necessary steps to work on a successful design as a member of a team. Topics include problem identification, brainstorming, project planning, and design alternatives. Cost, safety and environmental issues are considered as well as ethical and professional responsibilities. Prerequisite: Enrollment in an engineering program (3 credits) spring

ENGR1600  FUNDAMENTALS OF CAD & CAM
Basic concepts of engineering graphics, design and sketching and computer programming, research methodologies, manufacturing fundamentals, along with basic measurements and presentation of experiment results. (1 credit)

ENGR1800  PROGRAMMING WITH MATLAB
This course is universal to all freshman engineering students. MATLAB is a powerful programming language used throughout many engineering industries. This course provides an introduction to the fundamentals of computer programming and the use of MATLAB. The student will be introduced to the 'Procedural Programming' paradigm and will learn the proper use of the logical building blocks common to all modern computing languages and how to create specific programs using the MATLAB syntax. After this introductory course the student is encouraged to continue to use and develop their MATLAB programming skills by utilizing MATLAB for their other courses. (1 credit) fall, spring

ENGR2000  BUILT ENVIRONMENT SUSTAINABILITY
This interdisciplinary course, open to all majors, introduces Sustainability concepts in the context of the built environment examining the various sectors: residential, commercial, industrial, and transportation through the lens of globally utilized sustainability rating systems. The course focuses on the Leadership in Energy and Environmental Design (LEED) certification and the sustainable developments goals of the United Nations to explore strategies to reduce resource consumption and design sustainable structures. The course focuses on key knowledge areas of sustainability theory and practice, life cycle cost analysis, life cycle analysis, value engineering, water efficiency, energy efficiency, indoor environmental quality, materials resources, innovation and regional priority, design resilience, certification of sustainable designs, LEED accredited professional self-certification and post occupancy evaluation of sustainable designs. (4 credits)

ENGR3500  ENGINEERING JUNIOR DESIGN
This engineering design course is for junior level engineering and computer science students who will formulate a topic and develop a design for an innovative device or system. Students are encouraged to follow an interdisciplinary approach. Prerequisite: Junior status in an engineering or computer science program (4 credits)

ENGR3800  SPECIAL TOPICS IN ENGINEERING
Presents topics that are not covered by existing courses and are likely to change from semester to semester. Refer to the Class Schedule for a specific semester for details of offerings for the semester. (1 - 4 credits)

ENGR5000  ENGINEERING SENIOR DESIGN I
In this first capstone course, engineering students will apply knowledge and skills learned in their undergraduate engineering curriculum toward a proposed project approved by the faculty advisor to study, analyze, design, build and test concepts in a field of their choosing. Elements of the design process are considered as well as real-world constraints, such as economic and societal factors, marketability, ergonomics, safety, aesthetics and ethics. Prerequisite: senior standing; Corequisite: MGMT3200 (4 credits) spring

ENGR5500  ENGINEERING SENIOR DESIGN II
In this second capstone course, students will continue to work on their project. The final prototype will be presented by engineering students to meet initial specifications. Prerequisite: ENGR5000 (4 credits)