ENGR 101 | INTRODUCTION TO ENGINEERING  
Units: 3-4 Repeatability: No  
Core Attributes: Science/Tech Inquiry area  
Prerequisites: MATH 150 (Can be taken Concurrently)  
Introduction to the field of engineering. Students work in small teams to solve open-ended interdisciplinary design problems, including concept generation, analysis, computer aided design (CAD) modeling, construction, testing, development, and documentation. The project work is enhanced with lectures, activities, and reading on design, manufacturing, and engineering tools. Intended for majors in engineering or those exploring careers in engineering. Four hours lecture-laboratory weekly.

ENGR 102 | INTRODUCTION TO ELECTROMECHANICAL SYSTEM DESIGN  
Units: 3 Repeatability: No  
Prerequisites: ENGR 101 and MATH 150 and MATH 151 (Can be taken Concurrently) and (ENGR 121 or COMP 150) and PHYS 270 (Can be taken Concurrently)  
Introduction to the use of sensors, actuators, controllers, and computer interfaces for the use with electro-mechanical systems. Application of the engineering design process culminating in a team-based design project.

ENGR 103 | USER-CENTERED DESIGN  
Units: 3 Repeatability: No  
Core Attributes: Domestic Diversity level 1  
Prerequisites: ENGR 101 and MATH 150 and MATH 151 (Can be taken Concurrently)  
Introduction to strategies for developing designs that emphasize how users will interact with the final product. Iterative design methods to elicit user requirements, generate alternative designs, develop low-fidelity prototypes, and evaluate designs from the user’s perspective. Individual and collaborative strategies for design thinking, concept development, and functional evaluation.

ENGR 110 | THE DESIGN OF COFFEE  
Units: 3 Repeatability: No  
Core Attributes: Science/Tech Inquiry area, Lab  
This course serves as an introduction to how engineers approach and solve problems, demonstrated by the process of roasting and brewing coffee. Students will be introduced to basic principles of engineering analysis and design, and guided through a series of laboratory experiments testing the effect of design choices on the sensory quality of coffee. Both qualitative and quantitative concepts will be included in the course, along with discussion on the implications of coffee production and harvesting on land use, agriculture industry, labor force, economies, and societies. This course fulfills a Scientific and Technological Inquiry core curriculum requirement for non-majors. Concurrent registration in MATH 115 or higher recommended.

ENGR 121 | ENGINEERING PROGRAMMING  
Units: 3 Repeatability: No  
Prerequisites: MATH 150 (Can be taken Concurrently)  
Fundamentals of computer usage and programming in a structured, high-level language as commonly used in engineering systems development and applications; modular programming principles; use of the operating system and language constructs for program input/output; object-oriented programming. Three hours lecture weekly.

ENGR 294 | SPECIAL TOPICS IN ENGINEERING  
Units: 1-4 Repeatability: Yes (Can be repeated for Credit)  
Special topics in various areas of engineering science theory and practice, including laboratory. May be used to correct certain deficiencies in transfer work or for special projects.