1. Course number and name
   ENGR 103: Introduction to Computers

2. Credits and contact hours
   1 credit hour; one 2-hour-45-minute lab session/week

3. Instructor’s or course coordinator’s name
   Instructor: Susan M. Bowley, Ph.D.
   Course coordinator: Cheng Chen, Associate Professor

4. Text book, title, author, and year

   a. other supplemental materials
      • Arduino Starter Kit

5. Specific course information
   a. brief description of the content of the course (catalog description)
      Introductory course on programming, using a high-level language. Use of algorithms. Program organization, formulation, and solution of engineering problems. Laboratory.
   b. prerequisites or co-requisites
      MATH 226: Calculus I
   c. indicate whether a required, elective, or selected elective course in the program
      Required for Civil Engineering and Mechanical Engineering

6. Specific goals for the course
   a. specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.
      • Students will demonstrate an ability to use PC based computers and the university main frame.
      • Students will demonstrate an ability to use the ANSI-C compiler with multiple operating systems by using PCs and the main frame.
      • Students will demonstrate knowledge of the basic grammar of ANSI-C language.
      • Students will demonstrate knowledge of "hands-on" practice in the engineering computer lab.
      • The student will demonstrate knowledge of writing basic engineering problems.
b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.
Course addresses ABET Student Outcome(s): A, K

7. Brief list of topics to be covered
- Introduction to Computers, the Internet and the Web
- Introduction to C Programming
- Structured Program Development in C
- C Program Control
- C Functions
- C Arrays
- C Pointers
- C Characters and Strings
- C Formatted Input/Output
- C Structures, Unions, Bit Manipulation and Enumerations
- C File Processing
- C Data Structures
- C Preprocessor
- Other C Topics
- C++ as a Better C; Introducing Object Technology