1. **Course number and name**
   
   **ENGR 290**: Introduction to Programmable Logic Controllers (PLCs)

2. **Credits and contact hours**
   
   1 credit hour; one 2 hr 30 min session per/week for seven and a half weeks

3. **Instructor’s or course coordinator’s name**
   
   Instructor: Benjamin Rasenow, Lecturer
   
   Course coordinator: V.V.Krishnan, Professor

4. **Text book, title, author, and year**
   
   None, but handouts and internet links are provided as necessary.

   a. **other supplemental materials**
      
      1. *Programmable Logic Controllers* by Frank D. Petruzella
      2. *Programmable Logic Controllers* by W. Bolton
      3. *Introduction to Programmable Logic Controllers* by Gary Dunning

5. **Specific course information**
   
   a. **brief description of the content of the course (catalog description)**
      
      Basic understanding of programmable logic controllers; architecture, programming, interfacing, and applications. Hands-on experience on modern commercial PLC units is the main component.

   b. **prerequisites or co-requisites**
      
      Computer literacy; Internet literacy; consent of instructor

   c. **indicate whether a required, elective, or selected elective course in the program**
      
      Elective for 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.**
      
      - Introduce students to basics of PLCs
      - Enhance student’s understanding of PLCs and how PLCs are used in industrial environments.
      - Develop student’s ability to program a PLC unit to solve an engineering problem.

   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, c, d, e, i
7. Brief list of topics to be covered
   - Introduction of basic software and hardware for PLCs
   - How to do the PLC programming using PLC simulator?
   - Introduction of PLCs, programming tools, interfacing, and hardware configuration.