1. Course number and name
   ENGR 455: Power Electronics

2. Credits and contact hours
   4 credit hours

3. Instructor’s or course coordinator’s name
   Instructor: Jin Ye, Ph.D.
   Course coordinator: Jin Ye

4. Text book, title, author, and year
   a. other supplemental materials

5. Specific course information
   a. brief description of the content of the course (catalog description)

   b. prerequisites or co-requisites
      Grades of C or better in Engr 353 and ENGR 301 and ENGR 306

   c. indicate whether a required, elective, or selected elective course in the program
      Elective for Computer and electrical 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.
      1. The students will demonstrate their understanding about power electronic devices.
      2. The students will demonstrate their ability to analyze and design switch-mode DC-DC converters.
3. The students will demonstrate their ability to design feedback controller for switch-mode DC-DC converters.
   
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, b, c, k

7. *Brief list of topics to be covered*
   
   1. Introduction to power electronics.
   2. Design of switching power-roles.
   3. Analysis and design of switch-mode DC-DC converters.
   4. Feedback controller design in switch-mode DC-DC converters.
   5. Rectification of utility input using diode rectifiers.
   6. Switch-mode DC power supplies.
   7. Power electronics applications.