Sample course syllabus for ABET Self-Study Report (new format)

1. **Course number and name**
   ENGR 315: Systems Analysis Laboratory

2. **Credits and contact hours**
   1 credit hours; one 2-hr-45-minute laboratory session/week

3. **Instructor’s or course coordinator’s name**
   Instructor: Tom Holton, Instructor
   Course coordinator: Tom Holton, Professor of Electrical and Computer Engineering

4. **Text book, title, author, and year**
   none
   a. **other supplemental materials**

5. **Specific course information**
   a. **brief description of the content of the course (catalog description)**
   b. **prerequisites or co-requisites**
      ENGR 305: Systems Analysis (may be taken concurrently).
   c. **indicate whether a required, elective, or selected elective course in the program**
      Required for 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.**
      - Students will demonstrate the ability to use Matlab to plot signals in the continuous-time domain.
      - Students will demonstrate the ability to use Matlab to verify theoretical solution of linear differential equations in response to impulse and step inputs.
      - Students will demonstrate ability to use Matlab to plot convolution of two functions.
      - Students will demonstrate the ability to use Matlab to determine and plot Fourier series and Fourier transform of functions.
      - Students will demonstrate the ability to use Matlab to determine and plot Laplace transforms and inverse transforms.
      - Students will demonstrate the ability to use Matlab to determine the system function, Bode plots and pole-zero plots.
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, e.

7. Brief list of topics to be covered
   • Introduction to Matlab
   • Introduction to basic concepts of signals and systems.
   • Characterization of continuous-time signals.
   • Linearity and time invariance.
   • Time-domain solutions of differential equations.
   • Fourier series and Fourier transform methods.
   • Applications of Fourier transforms: sampling theorem, modulation
   • Laplace transform