1. Course number and name
   ENGR 427: Wood Structures

2. Credits and contact hours
   3 credit hours; three 50-minute lecture sessions/week, or two 1-hr-15-minute lecture
   sessions/week, depending on semester

3. Instructor’s or course coordinator’s name
   Instructor: Wenshen Pong, Professor of Civil Engineering
   Course coordinator: Wenshen Pong, Professor of Civil Engineering

4. Text book, title, author, and year
   Donald Breyer, K.J. Fridley, K.E. Cobeen and D.G. Pollock. Design of Wood Structures. 6th
   a. other supplemental materials

5. Specific course information
   a. brief description of the content of the course (catalog description)
      Design procedures and specifications of wood members subjected to tension,
      compression, flexure and combined bending and axial forces. Design building codes and
      seismic provisions of wood structures.
   b. prerequisites or co-requisites
      ENGR 323: Structural Analysis
   c. indicate whether a required, elective, or selected elective course in the program
      Elective for Civil 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.
      • The student will demonstrate knowledge of wood structural design criteria. The student
        will demonstrate knowledge of wood structural behavior when wood is subjected to
        bending, axial load and torsion.
      • The student will demonstrate knowledge of whether optimum design has been achieved.
      • The student will demonstrate knowledge of wood structural design procedures.
      • The student will demonstrate knowledge of the Allowable Stress Design method.
      • The student will demonstrate knowledge of the design of columns.
      • The student will demonstrate knowledge of the design of beams.
      • The student will demonstrate knowledge of the design of connections.
      • The student will demonstrate knowledge of the design of shear walls.
      • The student will demonstrate skill in solving practical engineering problems through
        project assignments.
The student will demonstrate an understanding of the design building codes and the background of codes.

The student will demonstrate skill in applying codes and specifications to design wood structural members.

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, e, f, i, k.

7. Brief list of topics to be covered

- Principles of structural design
- Properties of wood and its use as engineering material
- Design loads
- Beam design
- Column design
- Wood connections
- Plywood panels
- Horizontal diaphragms
- Combined bending and axial load
- Shear walls
- Nailed and stapled connections.
- Seismic design provisions