ABET course syllabus (Structural Analysis II)

1. **Course number and name**
   0901342: Structure analysis II

2. **Credit and contact hours**
   3 credit hours
   Office Hours: Monday and Wednesday 11:00AM-12:30PM

3. **Instructors:**
   Dr. Ahmed Ashteyat (a.ashteyat@ju.edu.jo)

4. **Text book:**
   - Fundamentals of Structural Analysis
     K.M. Leet, C.-M. Uang, A.M. Gilbert
     McGraw Hill
     4th ed., 2011
   - Fundamentals of Structural Analysis
     H.H. West and L. Geschwindner
     J. Wiley & Sons
     2nd ed., 2002
   - Structural Analysis by Aslam Kassimal
     CL Engineering; 5 edition (January 1, 2014)

5. **Course Information**
   a. **brief description of the content of the course (catalog description)**
      Indeterminate structures, force method, slope deflection method, three moment equation, and moment distribution method, influence line for first-degree indeterminate beams, stiffness method for trusses,
      a. **prerequisites or co-requisites**
         Prerequisite: Structure analysis I (0901341)
      b. **indicate whether a required, elective, or selected elective course in the program**
         Required 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 be able to use the force method for the analysis of statically indeterminate beams, frames, trusses, and composite structures.
      - The student will be able to analyze continuous indeterminate beams using three moment equation.
      - The student will be able to use the slope deflection equations for the analysis of statically indeterminate beams and frames.
• The student will be able to analyze continuous beams and frames using the moment distribution method.
• The student will be able to analyze indeterminate trusses using Stiffness Method

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, and k

7. Brief list of topics to be covered

• Analysis of Statically Indeterminate Structures by the Force Method
  o Beams
  o Frames
  o Trusses
  o Composite structures

• Influence line for indeterminate beams

• Three moment equation (for continuous indeterminate beams)

• Displacement Method of Analysis Slope-Deflection Equations

• Displacement Method of Analysis: Moment Distribution

• Truss Analysis Using the Stiffness Method