TEMPLE UNIVERSITY

COLLEGE OF ENGINEERING

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

**CMT 3145: Structural Analysis**

Spring 2019

**Class Schedule:** Tuesday andThursday, 12:30 PM-1:50 PM

**Room:** ENGR 304

**Instructor:** Dr. Felix F. Udoeyo

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 Email: ffudoeyo@temple.edu

 Office hours: Monday 1:00-2:00 PM, Wednesday 1:00 – 2:00 PM,

 Thursday 2:00 PM - 3:00 PM.

Textbooks: Structural Analysis by Felix Udoeyo, 1st Ed**.**

**Course Learning Objectives (CLO):**

Successful completion of this course will enable students to:

1. Understand the basic types of structural systems
2. To set up any given structural problem in an organized manner with accurate free body diagrams.
3. Identify an efficient method to analyze statically determinate and statically indeterminate structures.
4. Have a commitment to quality, timeliness, and continuous improvement.

**Course Topics:**

1. Introduction to Structural Analysis (CLO 1)

 2. Loads on Structures (CLO 1 and 2)

A. **Analysis of Statically Determinate Structures** (CLO 1, 2, 3, and 4)

3. Equilibrium and Support Reactions.

1. Beams and Frames: Shear and Bending Moment
2. Plane Trusses.
3. Deflection of Beams and Frames
4. Deflection of Trusses
5. Influence Lines for Determinate Structures

B. **Analysis Statically Indeterminate Structures** (CLO 1, 2, 3, and 4)

1. Method of Consistent Deformations.
2. Slope-Deflection Method
3. Moment Distribution Method
4. Influence Lines for Indeterminate Structures.
5. Application of Influence Lines.

**Policy and Guidelines:**

**Assigned Homework Problems:**

Students are to submit homework on the due date. The due date is a week from the date the problems were assigned. There will be no credit for late homework.

Homework solutions are to be presented on engineering paper. Use one side of the sheet only. Your name, course number, problem number and date must appear on the first page. Page number must appear on subsequent pages.

Homework solution must be preceded by a statement of the problem, complete with the necessary sketches. Neat and orderly presentations are expected.

**Examinations:**

Two midterms and one final examination will be held during the class period stated below. The final exam is cumulative, but the midterm examinations are not. Please plan your schedule to accommodate these. Use of one-page formula sheet will be allowed in all exams, but use of cellphone and programmable calculator is highly prohibited. Noncompliance with the afore-stated will be a bridge of academic integrity that all candidates are expected to demonstrate during exams.

Midterm 1 February 14, 2019

Midterm 2 March 26, 2019

Final Exam May 5, 2019

**Evaluation:**

Midterm 1 25 %

Midterm 2 25 %

Final Exam 30 %

Homework 10 %

Class Attendance & Participation 10 %

**Grading System:**

% Points Obtained Grade

95-100 A

90-94 A-

85-89 B+

80-84 B

75-79 B-

70-74 C+

65-69 C

60-64 C-

55-59 D+

50-54 D

40-49 D-

 0-39 F

**Students with Documented Disabilities:**

Please contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex for coordination of reasonable accommodation.

**Make-up Exams or Assignment**

A student may be allowed to make-up an exam or turn in homework late if valid reasons are presented to the instructor. If a student must miss an examination due to conflict in academic schedule he/she must notify the instructor prior to the scheduled examination.

**Homework Format**

Homework assignments are to be done on engineering paper. Student’s name followed on subsequent lines by the date and page number must appear in the upper right-hand corner of every sheet, while the assignment number must appear in the upper left-hand corner of the sheet. Do not work more than one problem per page, and do not work on the back of the page or use it for any reason. The layout and appearance of your work should be of professional quality.