

ASEN 3112 – Fall

Lab Assistant: David Andrew Kain, email: David.Kain@colorado.edu

Course Assistants: Parvaty Suresh

Lectures: T/Th: 08:00 – 9:15 pm, GOLD A2B70

Recitations & Labs: Section 011 M: 8:00 – 9 :50 am, ITLL 1B50**
Section 012 M: 3:00 – 4 :50 pm, ITLL 1B50**
Section 013 F: 3:00 – 4 :50 pm, ITLL 1B50**
Section 014 M: 5:00 – 6 :50 pm, ITLL 1B50**

** if location for particular labs differs from the one stated above, the alternate location will be announced on CANVAS.

Class Web Site: CANVAS, <https://learn.colorado.edu/> , ASEN3112

Class e-mail list: Through CANVAS only

Texts: Lecture notes are posted on CANVAS

Prerequisites: ASEN 2001-2003-2004 and APPM 2360, with grade of C or better in each.

Course Objectives: The main objective of the course is to introduce modern structural analysis techniques based on understanding of the development of internal forces, stresses and deformations. These are essential to the design and verification of advanced aerospace structures and systems. The course offers an introduction to matrix and finite element methods for skeletal (truss and frame) structures, as well as to fundamental concepts in mechanical vibrations, structural dynamics, and structural stability.

Major Course Topics and Schedule:

Week	Topic
1	The concept of stress and average stress
2	Strain measures, Elastic behavior of materials
3	Torsion I & II
4	Torsion III, Deformation of Beams I
5	Deformation of Beams II
6	Energy MethodsEMC 3

12	Structural Dynamics and Vibration IV & V
13	Fall Break
14	Stability of Structures I
15	Stability of Structures II & III
16	Design Problems I & II

Course Work:

Coursework consists of reading assignments, in-class clicker quizzes, homework, recitations, experimental/computer labs, three midterm exams and one final exam. Attendance to recitation is expected; attendance to labs is mandatory. Exams cover all material including lectures, recitations, laboratory work and homework.

Recitations: Recitations are offered on Fridays and Mondays (depending on the student’s lab section) at the Active Learning Center of ITLL 1B50, in four sections of 1 hr. 50 min each. The main objective is to review material covered during the week, especially that helpful for the currently assigned homework. Recitations may also include additional exercise material, not covered in class, useful for midterm exam preparation. Recitations are replaced by lab demos (conducted at the same time, also in ITLL 1B50, unless another location is announced) when laboratory and/or computer work is scheduled for the following week.

Reading Assignments: Reading assignments are to be completed before the lecture/discussion. The lecture/discussions should help to clarify and supplement what students have read.

Homework: Homework assignments are given most weeks on Thursdays and are due at the start of the following class on Thursday, as specified in the assignment. No homework assignments are due in the week of midterm exams. Assignments generally cover 3 to 5 problems and are designed to help students become proficient in a subject. Before doing any homework, students should read the posted lectures and try to follow worked-out examples. This should give the student an idea of the principles involved and the solution method. Homework

clicker quizzes will be dropped. Any other medical or academic-related absences will be considered case by case. They need to be communicated and approved ahead of the expected absence. These requests must be made in email to both instructors. The subject line of the email should read:

ASEN 3112 - Request for excused absence

