

AE 4220: Structural Dynamics and Aeroelasticity
Guggenheim 442, Tuesdays and Thursdays, 12:00 – 1:15 p.m.

Date	Topics	Reading	Problems
8/21	Introduction	Chapter 1	–
8/23	Structural Dynamics: Strings	Art. 2.2.1, 3.1.1	Problems 3:1-15 are assigned; work them as we go
8/28	–	Art. 3.1.2-4	–
8/30	–	Art. 3.1.4, 2.2.2 – 2.2.4, 3.1.5	–
9/4	–	Art. 3.1.5 – 3.1.7	–
9/6	Beams in torsion	Art. 2.3.1, 3.2.1, 3.2.2	–
9/11	–	Art. 3.2.2 – 3.2.4	Turn in problems 3:1-6
9/13	Problem session	–	–
9/18	Beams in bending	Art. 2.3.2, 3.3.1, 3.3.2	Turn in problems 3:7-9
9/20	Problem session and review	New material discussed only when review is finished	–
9/25	–	Art. 3.3.3	–
9/27	Exam 1	Covers through Art. 3.2.4	–
10/2	Go over exam	Art. 3.3.4, 3.3.5	–
10/4	Static Aeroelasticity: Divergence of spring-restrained, lifting surfaces	Art. 4.1.1-3	Problems 4:1-10, 17 and 18 are assigned; work them as we go
10/9	Fall Break – No class	–	–
10/11	Aileron reversal	Art. 4.1.4	Turn in problems 3:10-15
10/16	Torsional divergence	Art. 4.2.1, 4.2.2	–
10/18	Airload distribution	Art. 4.2.2 – 4.2.4	Turn in problems 4:1-6
10/23	Sweep effects and aeroelastic tailoring	Art. 4.2.6, 4.2.7	–
10/25	Problem session and review	New material discussed only when review is finished	Turn in problems 4:7-10, 17 and 18. Discuss problems 3.10-3.15 and all assigned chapter 4 problems
10/30	Dynamic Aeroelasticity	Art. 5.1	–
11/1	Exam 2	Covers through chapter 4	–

11/6	Go over exam; stability analysis	Art. 5.1	Problems 5:1-6 are assigned. Work them as we go. Problem 5:7 is optional and may be used to replace your lowest homework grade.
11/8	The typical section	Art. 5.2	–
11/13	Classical flutter analysis	Art. 5.3	–
11/15	Unsteady aerodynamics I	Art. 5.5	Turn in computer project, part 1, which consists of a write-up of the equations needed for writing the computer code called for in part 2 of the project handout.
11/20	Unsteady aerodynamics II	Art. 5.5	–
11/22	No class – give thanks!		–
11/27	Flutter characteristics	Art. 5.7	Turn in computer project part 2, which consists of a computer code that can be used to conduct the parametric studies called for in part 3 of the project handout.
11/29	Problem session	–	Turn in problems 5:1-6. Problem 7 is optional.
12/4	Review	–	Turn in computer project part 3, which consists of a report as described in the project handout.
12/10	Final exam 11:20 – 2:10 p.m.	Comprehensive with emphasis on Chapter 5	–

Updated 8/30/2018