Date	Topics	Reading	Problems
8/18	Introduction; modeling of single-degree-of-freedom (SDOF) systems	Art. 1.1 — 1.11	1.7, 8, 15, 16, 20
8/20	Equations and basic responses of SDOF systems	Art. 2.2	—
8/25	Response of SDOF systems to harmonic excitation	Art. 3.1	19, 24, 26, 30, 39
8/27	Viscous damping; structural damping; Coulomb damping	Art. 3.2	—
9/1	Response of SDOF systems to periodic excitation; Fourier series	Art. 3.3	3.1, 3, 5, 6, 8, 9
9/3	Laplace transforms	Art. 3.4	—
9/8	Convolution integral; Duhamel's integral	Art. 3.5	3.11, 13, 14, 18, 20, 27
9/10	Fourier integral; Fourier transforms	Art. 3.6	—
9/15	The Newtonian method	Art. 2.1 — 2.4	2.1, 2, 3, 9, 10, 24
9/17	Work, energy, and Lagrange's equations — I	Art. 2.5 — 2.8	—
9/22	Exam 1	Chapters 1, 3	—
9/24	Go over exam; Work, energy, and Lagrange's equations — II	Art. 2.9 — 2.11	2.26, 4.1, 2, 5, 20
9/29	Matrix eigenvalue problems	Art. 4.1 — 4.5	—
10/1	Conservative and non-conservative 2-degree-of-freedom systems	Art. 4.6 — 4.13	4.23, 28, 33, 37

10/6	Finding eigenvalues and eigenvectors; rigid-body modes; damping	Chap. 5	—
10/8	Response of multi-degree-of-freedom systems	Chap. 6	—
10/13	Mid-term break (no class)	—	—
10/15	Hamilton's principle and calculus of variations	Art. 2.10	—
10/20	Vibration of strings	Art. 7.1	7.2, 14, 26; 3, 15, 27
10/22	Vibration of rods in extension and torsion	Art. 7.6	—
10/27	Exam 2	Chapters 2, 4 — 6	—
10/29	Go over exam; bending vibration of Euler-Bernoulli beams — I	Art. 7.2, 7.7	5, 17, 30; 7, 19, 32
11/3	Bending vibration of Euler-Bernoulli beams — II	Art. 7.10	—
11/5	Initial-value problems for strings, rods, and Euler-Bernoulli beams	Art. 7.16, 7.19	35, 36, 37, 56, 57, 58
11/10	Membranes and plates	Art. 7.12, 7.13	—
11/12	Rayleigh's quotient; Stodola-Vianello method	Art. 8.4	38, 40, 42, 44, 47, 48
11/17	Rayleigh-Ritz and Galerkin's methods	Art. 8.5 — 8.8	—
11/19	Bending-shear vibration of Timoshenko beams — I	Art. 7.11	49, 50, 51, 52, 53, 54
11/24	Bending-shear vibration of Timoshenko beams — II	Art. 7.14, 7.15	—
11/26	Give thanks! (no class)	—	8.13 (ignore 8), 17, 18,

			19, 24
12/1	Strings revisited — the nonlinear nature of the problem	Art. 7.17, 7.18	—
12/3	Beams with axial force, rotating beams, Beck's problem	—	—
12/8	Final exam, 2:50 – 5:40 P.M.	Comprehensive	—

Assigned problems are due on the day the next assignment is posted (except problems assigned on 10/1 are due on 10/8, those assigned on 11/19 are due before 3:00 P.M. on 11/25, and those assigned on 11/26 are due 12/3). The final exam day and time are tentative.

This information was updated 8/3/2015.