1.561 Motion-Based Design
Spring 2007
Schedule

Date	Topic	Problems Due
Feb 6	Ch 1: Intro, Motivation, Motion v Strength	
Feb 8	Ch 1: Design for Dynamic Loading and Support Motion	
Feb 13	Ch 2: Governing Equations: Transverse Bending	**#1:** 1.4, 1.5, 1.6, 1.7
Feb 15	Ch 2: Stiffness Distribution for Static Loading	
Feb 20	*No Class – Monday Schedule*	**#2:** 1.8, 1.9, 1.10, 2.1, 2.3
Feb 22	TA Session	
Feb 27	Ch 2: Stiffness Distribution for Dynamic Loading	**#3:** 2.5, 2.6, 2.8, 2.14
Mar 1	Ch 2: Stiffness Calibration	
Mar 6	Ch 2: Stiffness Calibration	**#4:** 2.15, 2.16, 2.17(a,b,c), 2.19
Mar 8	Ch 3: Viscous, Frictional, and Hysteretic Damping	
Mar 13	Ch 3: Viscoelastic Damping; Equivalent Viscous Damping	**#5:** 2.21, 2.22, 2.25(a,b,c), 2.28
Mar 15	**Test #1**	
Mar 20	Ch 3: Damping Parameters: Discrete Shear Beam	**#6:** 3.1, 3.3, 3.5, 3.7, 3.8, 3.11
Mar 22	Ch 3: Damping Distribution for MDOF Systems	
Mar 27	*No Class – Spring Vacation*	
Mar 29	*No Class – Spring Vacation*	
Apr 3	Ch 4: Intro to Tuned Mass Dampers	**#7:** 3.17, 3.21, 3.22(a,b,c), 3.24
Apr 5	Ch 4: TMD Theory for SDOF Systems	
Apr 10	Ch 4: TMD Theory for MDOF Systems	**#8:** 4.3, 4.4, 4.5
Apr 12	Ch 4: TMD Theory for MDOF Systems	
Apr 17	*No Class – Patriots Day*	
Apr 19	Ch 5: Intro to Base Isolation	
Apr 24	Ch 5: Design Issues for Structural Isolation Systems	**#9:** 4.10, 4.11, 4.14(a), 4.15(a)
Apr 26	Ch 5: Optimal Stiffness Distribution for Isolation	
May 1	Ch 8: Intro to Dynamic Control Algorithms	**#10:** 5.1(a,part1), 5.3, 5.6(a,b)
May 3	Ch 8: Discrete Time Formulation: SDOF Systems	
May 8	Review	
May 10	**Test #2**	
May 15	Ch 8: Optimal Linear Feedback: SDOF Systems	
May 17	Ch 8: State-Space Formulation for MDOF Systems	**#11:** 5.6(c), 5.7, 8.3, 8.7