University of Hormozgan

Name of Faculty	Department of Mechanical Engineering	
Teacher	Dr. Mohammad Hosseini	Scan me!
Web Page	https://nasim.hormozgan.ac.ir/ostad/resualtfni?m=397121	
Theory/Sessional	**Mechanical Vibrations LAB/Experimental**	
Reference	Mechanical Vibrations in SI Units, Global Edition [6th ed.] SI Units, Global Edition-Pearson (2017) By Singiresu S. Rao	
Complementary	Theory of Vibration with Applications by W. T. Thomson and Marie Dillon Dahleh, S. Graham Kelly; Fundamentals of mechanical vibrations. ISBN: 0-07-911533-0 Ambekar, A. G., 2006, Mechanical Vibrations and Noise Engineering, Prentice Hall of India, New Delhi. Grover, G. K., 2009, Mechanical Vibrations, Nem Chand and Bros, Roorkee Timoshenko, S.; Vibration problems in engineering. ISBN: 0-471-87315-2 Hartog, J. P. den; Mechanical vibrations Meirovitch, Leonard; Elements of vibration analysis. ISBN: 0-07-041342-8	
Lesson Plan Duration	16 Weeks	
Working method	Presencial	
Pre-requirements (prior knowledge) and co-requirements (common knowledge)	•Students should be acquainted with vector calculus and ordinary differential equations. •Students should have attended and completed the courses on Mechanics I (equilibrium of rigid bodies, centroids and moments of inertia), Mechanics II (kinematics and dynamics of rigid bodies, work and energy), Solid Mechanics (tension-compression, torsion, bending and boundary conditions). •Students should be acquainted with Matlab/Octave software.	
Study level/ semester at which this course is offered:	Second Year- first or Second Semester	
Location of teaching the course	Department of mechanical Engineering	
Assessment Components	Designation	Weight (%)
	Midterm Exam	50%

	Final Exam	50%

Week	Topic
1	-
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2	Vibration Review
3	Mass – Spring system
4	Simple and Compound Pendulums
5	Mass Moment of Inertia Estimation-Part one: Bifilar Suspension
6	Mass Moment of Inertia Estimation-Part two: Auxiliary Mass Method
7	Forced Vibration with Negligible Damping
8	Transverse Vibration of a Beam
9	Undamped vibration absorber
10	Static and Dynamic Balancing Part I
11	Static and Dynamic Balancing Part II
12	Review
13	Final Exam