



Course Name	Mechanical Vibration and Measurement										
Course Director	Yang Jin, Yiming Guo, Jidong Fan										
Major	Mechanical Engineering, Automotive Engineering										
Objective	To develop the students to gain some expertise in the areas of both dynamic analysis of vibratory mechanical systems and vibration measurement.										
Semester	6th										
Language	English										
Learning/Teaching methods	Lectures, Homework and self-study /Experiment										
Hour	36h in total, including 29 h Lectures, 3h Experiments and 4h examinations										
Credit	3.0										
Prerequisite	Advanced Mathematics, College Physics, Theoretical Mechanics, Material Mechanics, Descriptive Geometry and Mechanical Drawing, Fundamentals of Computer										
Content	Simple Harmonic Movement (2h) Harmonic Waveform Analysis (2h) Vibration of Single Degree of Freedom Systems (10h) Vibration of Multiple Degree of Freedom Systems (8h) Vibration of Continuous System (4h) Data Acquisition, Accelerometer & Spectral Analysis (6 h) Two Examinations (4h)										
Grade/Exam	The final course grade will be based upon the following weighted average: <table style="width: 100%; border: none;"> <tr> <td style="width: 70%;">Homework/Quizzes</td> <td style="width: 30%; text-align: right;">20%</td> </tr> <tr> <td>Labs</td> <td style="text-align: right;">10%</td> </tr> <tr> <td>2 Examinations</td> <td style="text-align: right;">40%</td> </tr> <tr> <td>Final Examination</td> <td style="text-align: right;">30%</td> </tr> <tr> <td></td> <td style="text-align: right;">100%</td> </tr> </table>	Homework/Quizzes	20%	Labs	10%	2 Examinations	40%	Final Examination	30%		100%
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Reference	[1] Singiresu S. Rao. Mechanical Vibrations, 4th Ed. Addison-Wesley, 2004 [2] William T. Thomson, Marie Dillon Dahleh. Theory of Vibration with Applications, 5th Ed. English reprint edition by Pearson Education, 2005 [3] J.P. Den Hartog. Mechanical Vibrations. Dover Publications, January 1, 1985										