ME 563 SYLLABUS

MECHANICAL VIBRATIONS
Fall Semester 2010

INSTRUCTOR: Professor Douglas E. Adams, School of Mechanical Engineering
E-mail: deadams@purdue.edu (24 hours a day, 7 days a week!)
Office Hrs: MW 3:30-4:20 p.m. ME 361, 765-496-6033

COURSE TEXT: ME 563 Notes, D. Adams in addition to the following:

Recommended Texts:

*Theory of Vibration with Applications*, Thompson, W. T.,

OR


REFERENCES:


GOALS: This course introduces techniques in discrete and continuous mechanical vibrations modeling, equation of motion derivation, free and forced response analysis, and approximate solution methods. Linear superposition and modal decompositions are used to analyze time and frequency domain response behavior of multiple degree-of-freedom systems and continuous systems. Case studies are carried out to demonstrate how the theory presented in class can be applied to real world vibration problems. Our goals are to develop insight as to which method should be used to derive equations of motion and to develop a working knowledge of the various discrete and continuous methods for analyzing linear mechanical vibrations.

GRADING POLICY:

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<tr>
<th>Exam Type</th>
<th>Percentage</th>
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<tr>
<td>Midterm Exam I</td>
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<tr>
<td>Midterm Exam II</td>
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<td>Final Exam</td>
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HOMEWORK POLICY:
Homework will not be collected. However, students are expected to go through the solutions that will be provided and to seek out help from the instructor for answers to their questions. Students are encouraged to work together on homework.

EXAMINATIONS:
There will be two closed book, closed notes midterm exam during the course and a closed book, closed notes final exam at the end of the semester. Students are expected to write neatly and to use clear problem solving formats in their work. If graders have great difficulty reading a student’s work, points will be deducted from the total score. Graded exams will be returned as soon as possible. An exam re-grade must be requested in writing within one week after its original return. There will be no make-up examinations and students should contact the instructor prior to an exam if there are extenuating circumstances.

FINAL EXAMINATION:
The final exam will be comprehensive. The time, date, and venue are to be announced.

COMPUTER USAGE:
Students will be expected to use MATLAB for some of the homework assignments. You must secure a computer account equipped with MATLAB within the first week of class. You may also want to learn to use SIMULINK because it is helpful in developing intuition about mechanical vibrations.

ACADEMIC INTEGRITY:
Students and faculty are expected to conduct themselves professionally and with high academic integrity at all times. All occurrences of cheating will result in a failing grade and will be reported to a university committee on academic integrity.