Department of Mechanical Engineering
University of California at Berkeley
ME 277 Oscillations in Nonlinear Systems
Spring Semester 2010

Instructor: F. Ma
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Consultation Hours: MW 1-2.30 pm

Class Location and Website
MWF 3-4 pm, 237 Cory; course website at https://bspace.berkeley.edu/

Course Prerequisite
ME 175 Intermediate Dynamics

Textbook

Supplementary References

Course Contents
Oscillations in nonlinear systems having one or two degrees of freedom. Qualitative and quantitative methods: graphical, iteration, perturbation, and asymptotic methods. Self-excited oscillations, limit cycles, and domains of attraction.

Class Rules
Homework problems will be assigned from time to time. Two progress examinations are planned (the final examination is originally scheduled on Wednesday, 5/12/2010, 7-10 pm). Examinations must be taken as scheduled. Approximate contributions to the final grade are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>5%</td>
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<tr>
<td>Midterm on Friday, 3/19/2010, 3-4 pm</td>
<td>45%</td>
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<tr>
<td>Final Examination on Friday, 4/30/2010, 3-4 pm</td>
<td>50%</td>
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Course Objectives
To give a compact, consistent, and reasonably connected account of the theory of nonlinear vibrations at the advanced level. A secondary purpose is to survey some topics of contemporary research. Applications will be mentioned whenever feasible.
Additional References


