Instructor: Dr. A. Rahimi
Lecture: T-Th 7:30 – 8:45 PM, Class Code: 44273
Classroom: Eng 340
Telephone: (408) 276-2986
Email: arz rahimi@yahoo.com
Office Hours: T-Th 5:30 – 6:00 PM at Eng 348
Prerequisite: BSME or BSAE & Consent of the instructor (Had a course in Vibrations; ME147 or Equivalent & ME130)

Course Description

Required Text

Other Readings

Assignments and Grading Policy
Homework: 30%
Midterm: 30%
Final: 40%
Homework will be assigned weekly on each Thursday and is due on the next Thursday. Homework will be graded and retuned with the solution the following week.

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation, studying or course related activities including but not limited to internships, labs, clinical practical. Other course structures will have equivalent workload expectations as described in the syllabus.
Course Goals

1. To learn fundamental concepts of mechanical vibration.
2. To learn fundamental concepts of vibrations for linear systems.
3. To learn fundamental concepts of discrete models of continuous systems.
4. To learn applications of analytical and numerical methods to solve problems in vibration of mechanical systems.
5. To develop numerical analysis solutions for linear mechanical systems.

Student Learning Objectives

1. To fully understand the method of solution for systems with one degree of freedom: damp and undammed systems.
2. To be able to apply techniques for solving systems with modeling and approximate methods for free vibrations.
3. To be able to apply techniques for solving linear systems with characteristics-approximate methods for forced vibrations.
4. To be able to apply techniques for solving linear systems with higher degrees of freedom-approximate methods for free and forced vibrations.
5. To know how to deal with modeling of mechanical systems for vibrations.
6. To be able to use numerical methods to solve vibration problems.

Classroom Protocol

Students should attend all classes and take class notes to support their reading assignments. No use of Cell phone is allowed in the class during the instruction.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic calendar web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the Advising Hub at http://www.sjsu.edu/advising/.

Last Day to Drop: Tuesday 09/05/2014
Last Day to Add: Tuesday 09/12/2014
Holidays: Monday 09/01/2014 (Labor Day)
          Tuesday 11/11/2014 (Veteran’s Day)
          Thursday 11/27/2014 and Friday 11/28/2014 (Thanksgiving Holiday)
Last Day of Instructions: Wednesday 12/10/2014
University Policies

Academic integrity

Your commitment as a student to learning is evidenced by your enrollment at San Jose State University. The University’s Academic Integrity policy, located at http://www.sjsu.edu/senate/S07-2.htm, requires you to be honest in all your academic coursework. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU’s Academic Policy S07-2 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the Disability Resource Center (DRC) at http://www.drc.sjsu.edu/ to establish a record of their disability.
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<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture Topics for Advanced Reading</th>
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<tr>
<td>2</td>
<td>Sep 2-4, 2014</td>
<td>Modeling of Mechanical Systems - Differential Equations of Motion – System Response – Vibration about Equilibrium Point</td>
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<tr>
<td>4</td>
<td>Sep 16-18, 2014</td>
<td>Viscously Damped S.D.O.F Systems – Critically Damped - Damping Measurement - Coulomb Damping (Dry Friction)</td>
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<td>Oct 2, 2014</td>
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<td>7</td>
<td>Oct 7-9, 2014</td>
<td>Energy Dissipation – Structural Damping – Damping Practical Considerations - Fourier Series -Response to Periodic Excitations</td>
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<td>13</td>
<td>Nov 18-20, 2014</td>
<td>Chapter-7: Multi-Degree-Of-Freedom (M.D.O.F) Systems Equations of Motion - Eigenvalue Problem – Modal Analysis</td>
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<td>14</td>
<td>Nov 25-27*, 2014</td>
<td>Approximation Methods - Rayleigh’s Quotient *No Class on Thursday Nov 27: Thanksgiving Holiday</td>
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<td>15</td>
<td>Dec 2-4, 2014</td>
<td>Chapter-8: Distributed Parameter Systems – Introduction - String, Beam, and Rod Longitudinal &amp; Torsional Vibrations</td>
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<td>16</td>
<td>Dec 9, 2014</td>
<td>Review of Course for Final Exam</td>
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<td>Final</td>
<td>Dec 16, 2014</td>
<td>7:45 PM – 10:00 PM  (Eng 340)</td>
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