DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING
COLORADO STATE UNIVERSITY
CIVE 562 - FUNDAMENTALS OF VIBRATIONS
Spring 2013 (Rev 5, 2-19-2013)

I. LECTURES: MWF 12:00 – 12:50 p.m., Engineering Building, Room B4

II. TEXT: Thomson, W.T. and M. D. Dahleh, "Theory of Vibration with Applications"

III. INSTRUCTOR: Bogusz Bienkiewicz
Office: A207B, Eng. Bldg. (ERC A127)
Phone: 491-2026 (491-8232)

IV. OFFICE HOURS: M 4:00 – 5:00 pm, WF 1:30 – 2:30 p.m.

V. HOMEWORK: Several sets of homework problems will be assigned, collected and graded.

VI. TESTS: Two tests during the semester.

VII. FINAL EXAM: A comprehensive final exam, Monday, May 13, 2013, 7:30 – 9:30 am..

VIII. PAPER REVIEW: Each student will select and review one technical paper dealing with vibration problem(s). At the end of the semester, each student will make a short (5 min.) presentation of the review and submit to the instructor a short written review of the paper.

IX. GRADING:

Homework Problems	20%
Test 1 (Wed. Feb. 27, 2013)	23%
Test 2 (Fri., April 12, 2013)	23%
Final Exam	30%
Review	4%
TOTAL	100%

X. ACADEMIC INTEGRITY POLICY:
The course will adhere to the Academic Integrity Policy of the Colorado State University General Catalog (Page 7) and the Student Conduct Code.

XI. HONOR PLEDGE: The following Honor Pledge must be included (and signed by the student) in any written work required by this course and submitted by the student.

I pledge on my honor that I have not received or given any unauthorized assistance in this assignment [exam] [academic work].

……*(student's name and signature)*

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TOPICS

1. INTRODUCTION – OVERVIEW
2. SMALL VIBRATIONS OF MECHANICAL SYSTEMS
3. FREE VIBRATION OF SINGLE DEGREE-OF-FREEDOM SYSTEMS
4. FORCED VIBRATION OF SINGLE DEGREE-OF-FREEDOM SYSTEMS
5. APPLICATIONS - VIBRATION ISOLATION, MEASUREMENT, DAMPING
6. RESPONSE TO PERIODIC EXCITATION
7. UNIT, STEP AND TRANSIENT RESPONSE
8. FREE RESPONSE OF TWO DEGREES-OF-FREEDOM SYSTEMS
9. FORCED RESPONSE & APPLICATIONS - TWO DEGREES-OF-FREEDOM SYS.
10. MULTI DEGREES-OF-FREEDOM SYSTEMS - EQTS., STIFFNESS & FLEXIBILITY
11. FREE VIBRATIONS OF MULTI DEGREES-OF-FREEDOM SYSTEMS
12. MODAL ANALYSIS OF MULTI DEGREES-OF-FREEDOM SYSTEMS
13. FREE VIBRATIONS OF CONTINUOUS SYSTEMS
14. MODAL ANALYSIS OF CONTINUOUS SYSTEMS
15. NUMERICAL ANALYSIS