

Aerospace Structural Dynamics

MAE 3316

MWF 11:00AM -11:50AM

Spring 2007

1. Instructor: Bo Ping Wang
2. Office Location: 304C Woolf Hall
3. Office Hours: MW: 1:30PM-3:30PM
4. Phone: (817)-272-3426
5. Fax: (817)-272-2952
6. Mailbox: 204WH
7. Email: bpwang@uta.edu
8. Instructor WWW Site:
9. Link to Additional Course Info:

10. Course Prerequisites:

MAE 2323, MAE 3315

11. Required Readings/Materials:

Text: Engineering Vibration, 2nd Edition, Daniel J. Inman, Prentice Hall, 2001

12. Course Description:

Free and forced vibration responses of undamped and damped systems. Single and multiple degree of freedom systems. Introduction to finite element method for vibration analysis.

13. Course Learning Goals/Objectives:

Formulation of equations of motion by Newton's law and Lagrange's equation. Solution of response of SDOF systems due to initial conditions and transient and harmonic inputs. Solution of eigenvalue problem for multi-degree-of freedom systems. Forced response computation using mode superposition. Computer method for solution of structural dynamic problem by finite element methods.

vibration analysis.

14. Attendance and Drop Policy:

Attendance required. The last drop date: Friday, March 30th, 2007.

15. Tentative Lecture/Topic Schedule (course content):

Introduction : Chapter 1 of the text

Single-degree-of-freedom systems : Chapters 2,3 of the text

Multiple-degree-of-freedom systems : Chapters 4 of the text

Continuous systems : Chapters 6 of the text

Design for vibration suppression : Chapters 5 of the text

Finite element method : Chapters 8 of the text

Matlab will be used extensively.

Specific Course Requirements with descriptions

1. Quizzes (number and type):

3 in-class pop-quizzes (bonus). Each pop-quiz is worth of 1% of the final grade.

2. Examinations (number and type):

Two mid-term exams and the final exam/Closed Book

3. Final Examination: Comprehensive

4. Other Graded Assignments (Homework / Projects / Labs / Research Papers):

Homework - assigned in each week and due at the beginning of Monday's class. Must be neat; staple pages. No late homework. Each homework problem will be graded out of 10 points. All homework that is obviously transcribed will receive a score of zero.

5. Missed Exams, Quizzes and Makeup Work:

No makeup work

6. Grading Format Weighting / Point Value of Assignments and Examinations:

Grading: Homework: 20%; 2 Midterm exams: 25% each (60% total); Final Exam: 30%

7. Other Information:

Final Review Week

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabi. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week.

Americans With Disabilities Act

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 -- The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans With Disabilities Act - (ADA), pursuant to section 504 of The Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens.

As a faculty member, I am required by law to provide "reasonable accommodation" to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

Academic Dishonesty

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University.

"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (Regents' Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22)

Student Support Services Available

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. These programs include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

For assistance with your library needs in this course, please consult the appropriate subject librarian.