

**University of Southern California
Department of Civil & Environmental Engineering**

CE 546: Structural Mechanics of Composite Materials

**Semester: Fall 2010
Class Meeting: Wednesday, 6:40PM - 9:20PM**

Instructor: **Dr. A. M. Niazy, P.E.**

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Main Topics, Assignments, Delivery, & Exams Schedule

Meeting	Date	Topics	Assignment	Delivery
1	25-Aug	Introduction	HW 1	
2	1-Sep	Anisotropic Elasticity	HW 2	HW1
3	8-Sep	Isotropic Thin Plate Theory:	HW 3	HW2
4	15-Sep	Kirchhof Hypothesis	HW4	HW3
5	22-Sep	Classic Lamination Theory:	HW 5	HW4
6	29-Sep	ABD Matrix/ Review	HW 5	
7	6-Oct	Midterm Exam	Project	
8	13-Oct	Classic Lamination Theory: Bending, Buckling, Vibration		HW 5
9	20-Oct	Strength and Failure: Maximum		
10	27-Oct	stress/strain, Tsai-Hill, Tsai-Wu	HW 6	
11	3-Nov	Criteria	HW 7	HW 6
12	10-Nov	Micromechanics of	HW 8	HW 7
13	17-Nov	Composites: Stiffness, Strength	HW 9	HW 8
14	24-Nov	Laminate Design: Stress		Project
15	1-Dec	Concentration, Fracture, Joints		HW 9
16	8-Dec	Final Exam		

References:

- A. K. Kaw, "Mechanics of Composite Materials," 2st Edition, CRC-Press, Inc., 2005 (Required Textbook).**
- R. M. Jones, "Mechanics of Composite Materials," 2nd Edition, Taylor & Francis, Inc., 1999.
- M. W. Hyer, "Stress Analysis of Fiber-Reinforced Composite Materials," McGraw-Hill Inc., 1998.
- Y. C. Fung, "Foundation of Solid Mechanics," Prentice Hall, 1969.
- Reddy, J. N., "Theory and Analysis of Elastic Plates and Shells," CRC, 2nd edition, December 2006.
- P.L. Gould, "Analysis of Shells and Plates," Prentice Hall, 1999.
- R. Szilard., "Theory and Analysis of Plates," Prentice Hall, 1974.
- S. Timoshenko and S. Woinowsky-Krieger, "Theory of Plates and Shells," 2nd Ed., McGraw-Hill, 1959.

Grading:

20% Homework + 20% Midterm Exam + 20% Project + 40% Final Exam = 100%

- Exams: **Closed Book, allowed only 1 Sheet 8.5" x 11" (2 pages) of Formulae + Calculator**
Students must return question sheets back with their answer sheets at the end of the exams
 - a. Midterm Exam (90 minutes): Wednesday, **6 October** 2010.
 - b. Final Exam (120 minutes): Wednesday, **8 December** 2010.

No make-up on any examinations

- Project Delivery: Wednesday, **24 November** 2010, **6:40 PM Los Angeles Time** (Pacific Time).
 - **No late projects will be accepted.**
- Homework: Weekly assigned homework problems are due on the following week, **by 6:40 PM Los Angeles time, USA**, unless instructed otherwise.
 - **No late Homework will be accepted.**

Statement for Students with Disabilities

- Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement on Academic Integrity

- USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus*, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/>. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>.