SPRING 2018

EAS 4240 Aerospace Structural Composites (Section 1507)
Graduate Course EAS 6939 (Section 103G)

MWF 3rd period (9:35-10:25 AM) NEB 102

Modifications to this syllabus may be required during the semester. Changes will be posted on Canvas.

Instructor: Professor B.V. Sankar, Department of Mechanical & Aerospace Engineering,
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Class time and location: Monday, Wednesday, Friday, 3rd period (9:35-10:25 AM), NEB 102

Instructor Office Hours TR 1-3 PM or by appointment

Textbook: Principles of Composite Material Mechanics (Third or Fourth Edition) by R.F. Gibson, CRC Press, Boca Raton, FL (ISBN 9781439850053).

Note: The second edition can also be used as used books might be available.

Prerequisite: Mechanics of Materials (EGM 3520)

Goals: The major goal of this course is to give the student an introduction to the theory and applications of advanced fiber-reinforced composite materials. After completing this course, the student should be able to select and use appropriate composite materials in a variety of applications.

Engineering Applications: Currently fiber reinforced and particle reinforced composites are used in aerospace, automobile, marine and rail transport, electronic packaging, buildings and bridges (civil infrastructure), sporting goods, biomedical devices etc. This course will help engineers to design these structures based on sound mechanics principles.

Course Schedule (Subject to change)

Lecture	Date	Day	Chapter	Topics	HW/Quiz/Exam
1	8-Jan	MON	1	Introduction	
2	10-Jan	WED	1		
3	12-Jan	FRI	2	Lamina stress-strain relations	
	15-Jan	MON		**Martin Luther King Day**	Holiday
4	17-Jan	WED	2	Lamina stress-strain relations	HW01
5	19-Jan	FRI	2		
6	22-Jan	MON	2		**QUIZ 1**
7	24-Jan	WED	2		HW02
8	26-Jan	FRI	2		
9	29-Jan	MON	4	Strength of composite materials	
10	31-Jan	WED	4		HW03
11	2-Feb	FRI	4		

12	5-Feb	MON	4		**QUIZ 2**
13	7-Feb	WED	4	Strength of composite materials	HW04
14	9-Feb	FRI	7	Laminate analysis	
15	12-Feb	MON	7		HW05
16	14-Feb	WED	7		
17	16-Feb	FRI	7		
18	19-Feb	MON	7		**QUIZ 3**
19	21-Feb	WED	7		HW06
20	23-Feb	FRI	7		
	26-Feb	MON	7	**EXAM 1**	**EXAM 1**
21	28-Feb	WED	7	Laminate analysis	HW07
22	2-Mar	FRI	7		
	5-Mar	MON	7	**Spring Break**	
	7-Mar	WED	7		
	9-Mar	FRI	7		
23	12-Mar	MON	7	Laminate Analysis	
24	14-Mar	WED	7		HW08
25	16-Mar	FRI	7		
26	19-Mar	MON	7		**QUIZ 4**
27	21-Mar	WED	7		HW09
28	23-Mar	FRI	7		
29	26-Mar	MON	3	Micromechanics	
30	28-Mar	WED	3		HW10
31	30-Mar	FRI	3		
32	2-Apr	MON	3		**QUIZ 5**
33	4-Apr	WED	3		HW11
34	6-Apr	FRI	3		
	9-Apr	MON	9	**EXAM 2**	**EXAM 2**
35	11-Apr	WED	9	Fracture of composite materials	HW12
36	13-Apr	FRI	9		
37	16-Apr	MON	10	Mechanical testing	
38	18-Apr	WED	10		HW13
39	20-Apr	FRI	10		**QUIZ 6**
40	23-Apr	MON	10		
41	25-Apr	WED		**Review**	HW14
	3-May	THU		**Final Exam (Comprehensive)**	12:30-2:30 PM

Project(s) Students will develop a computer program (MATLAB) for the analysis of composite laminates.

Graduate Section: Students registered for EAS 6939 will be doing an extra project/presentation.

Homework: Homework problems are due at 11:59 PM on most **Wednesdays**. Late homework will not be accepted, but two worst home-works will be dropped.

Quizzes: There will be six quizzes. One worst quiz will be dropped. No Makeup quiz will be given.

Examinations: There will be two in-class exams and one final exam. Final exam is comprehensive.

Students are allowed to bring one hand-written 8½ ×11 inch formula sheet written on both sides for quizzes and exams.

Grading: Homework 10%, Computational Projects 15%, 5 quizzes 25%, two midterm tests 30% (15% each), Final Exam 20%,

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100	92.9	89.9	86.9	82.9	79.9	76.9	72.9	69.9	66.9	62.9	59.9
93	90	87	83	80	77	73	70	67	63	60	

Re-grading: Regrading requests must be submitted in writing within 48 hours after quiz/exam is returned.

Academic honesty: All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is reminder to uphold your obligation as a student at the University of Florida and to be honest in all work submitted and exams taken in this class and all others.

All honor code violations will be reported to appropriate university authorities.

Any misconduct in exams will lead to an E grade for the course. Misconduct in quizzes and HWs will result in reduction of grade by a point.

Honor Code All work submitted in this course must be your own and produced exclusively for this course. The use of sources (ideas, quotations, paraphrases) must be properly acknowledged and documented. For the copy of the UF Honor Code and consequences of academic dishonesty, please refer to http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php Violations will be taken seriously and are noted on student disciplinary records.

The Honor Pledge We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

Attendance Policy: Students are expected to attend all classes. They will be responsible for any announcement made in the class regarding assignments, quizzes and exams.

Make-Up Exam Policy

Note: No make-up quiz will be given

Attendance at the exams is required, unless otherwise stated explicitly in advance.

Unexcused absences will be reported as a failure.

Acceptable reasons for absence: Personal or family (immediate family member) illness, death of an immediate family member, or other situations of comparable gravity

Documentation must be presented prior to final determination. Examples include but are not limited to

(i) A physician's note which documents an illness and indicates the severity of the illness that would have prohibited taking the examination

(ii) An obituary which documents the death of a close family member and their relationship to the student

Note: No make-up quiz will be given

Accommodations for students with disabilities

"Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation."