

MSE 514 — “Composite Materials”

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Text: A.B. Strong, Fundamentals of Composites Manufacturing, 2nd ed, Society of Manufacturing Engineers, 2008 ISBN 0-87263-854-5.

Time: 4:30–6 pm, Tues/Thurs

Tentative schedule (Winter 2014):

<u>Date</u>	<u>Lecture</u>	<u>Topic</u>	<u>Reading</u>	<u>Problems due</u>
Jan 9	1	Overview	Chap 1	
	14	2 Weight and volume fractions	Chap 8	
	16	3 Materials comparisons based on use	“	I.1
	21	4 Reinforcements, mainly fibers	“	I.2
	23	5 “	“	I.3
	28	6 “	“	I.4
	30	7 Fiber-matrix interface & testing	Chap 10	I.5
Feb 4	8	Metal-matrix composites	Chap 7	I.6
	6	9 Review for first exam		
	11	First exam		
	13	10 Metal-matrix composites, cont’d	“	
	18	11 Ceramic-matrix composites	“	II.1
	20	12 Polymer matrix composites	Chap 2	II.2
	25	13 “	Chap 6	II.3
	27	14 “	Chap 3	II.4
Mar 4		No Class (Winter Recess)		
	6	No Class (Winter Recess)		
	11	15 Polymer matrix composites, cont’d	Chap 4, 5	II.5
	13	16 Fiber handling	Chap 9	II.6
	18	17 Review for second exam		
	20	Second exam		
	25	18 Giving flat fabrics some shape	“	
	27	19 Nanocomposites	Suppl	III.1
Apr 1	20	Elastic behavior of composites	Chap 11	III.2
	3	21 “	“	III.3
	8	22 Laminar and laminate strength	Chap 12	III.4
	10	23 Short-fiber composites		
	15	24 Open & compression molding & resin infusion	Chap 13–16	III.5
	17	25 Filament winding, pultrusion & thermoplastics	Chap 17–19	III.6
	22	26 Review		
	29	Tuesday, 8:00 a.m.–10:00 a.m., FINAL EXAM		

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Grading: Out of 100 points,

Homework	15 points possible
Exam 1	25 points possible
Exam 2	25 points possible
Final Exam	35 points possible

Homework policy:

You may discuss homework assignments with anyone, including me, but at the end

- Please make sure you understand both the question and the answer
- For what you submit, please compose it yourself

Exam policy:

Exams are Closed-Book (no notes, no smart phone communication)

Strict observance of the College Honor Code

Grades (nominally)

A's	≥ 90 points
B's	75 – 89 points
C's	60 – 74 points