UNIVERSITY OF MARYLAND BALTIMORE COUNTY Department of Mechanical Engineering

ENME 220 – MECHANICS OF MATERIALS: FALL 2013

Prerequisites:	Statics (ENME-110: Must have earned a grade of	B or better for ME
	Gateway) Calculus II (MATH-152) and Physics I ((PHYS-121)

Instructor:	Panos Charalambides, Professor
	ECS 209 Tel. # (410)-455-3346). E-mail: panos@umbc.edu
Office Hrs:	3:00 -4:00 p.m., Tuesdays & Thursdays (and by appointment)

Graduate Teaching Assistants:

Kourosh M Kalayeh, *kourosh2@umbc.edu*, ENG227, x5-3453 (Half TA) Sandra Murcia, *smurcia2@umbc.edu*, ENG208, x5-8136 (Half TA)

Undergraduate Fellows:

Mr. Jacob Alvarez, *alv3@umbc.edu* Ms. Stephanie Bonadies, *stephb3@umbc.edu* Mr. Michael Roberts, *mrob2@umbc.edu* Ms. Veronica Ruf, *yc91977@umbc.edu*



ACADEMIC INTEGRITY

"By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, or the UMBC policies section of the UMBC Directory." *UMBC Faculty Senate, February 13, 2001.*

Mechanical Engineering repeat policy:

At UMBC, students may not register for a course more than two times. They are considered registered for a course if they are enrolled after the end of the schedule adjustment period – Tuesday, February 8th, this semester. Students may petition the Office of Undergraduate Education for a third and final attempt of a course taken at UMBC or another institution; the Department of Mechanical Engineering, however, will not support petitions to repeat required lower-level courses (100-200) for the purpose of continuing in the major.

UNIVERSITY OF MARYLAND BALTIMORE COUNTY

Department of Mechanical Engineering

ENME 220 FALL 2013

Prerequisites: Statics (ENME-110: Must have earned a grade of B or better for ME Gateway) Calculus II (MATH-152) and Physics I (PHYS-121)

Section 0101	Lectures: 10:0	0am –11:15 am. '	Tuesdays &	k Thursdays Room: PUP105
	Honors Section	n:As in regular sec	ction, plus	12:00 noon-12:50 pm, Tue & Th, ENG112.
Discussion	220-02	9:00-9:50am.	Fridays.	Room : ITE 231.
Discussion	220-03	10:00-10:50am.	Fridays.	Room: ITE 241.
Discussion	220-04	11:00-11:50am.	Fridays.	Room : ITE 237.
Discussion	220H-02	12:00-12:50pm.	Thursda	ys. Room: ENG112.

Text: Mechanics of Materials, Sixth Edition, W.F. Riley, L.D. Sturges and D.H. Morris.

Instructor:	Panos Charalambides, Professor
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TAs and Fellows will be assigned to homework and quiz grading, tutoring and delivery of Discussion sessions. All office hours are shown on attached weekly schedule.

Grading:	Homework	15%	90-100	Α
	Discussion work	10%	80-89	В
	Quizzes	20%	70-79	С
	Two Term Exams	30%	60-69	D
	Final Exam	25%	<60	F

Quizzes: There will be **seven announced** and **up to three unannounced** 20 minute quizzes at the start or end of the class. Announced quizzes are indicated on syllabus.

Homework: a) Six homework problems will be assigned each period two of which will be turned in at the beginning of the next period to be graded.

- b) Half credit is given for late homework.
- c) No homework will be accepted which is more than one period late.
- d) HW sets to be graded will be posted on BB.Practice HW problems are listed on day-by-day syllabus.
- e) Homework must be on 81/2"x11" paper. (No spiral notebook paper).

Homework grading considerations. (Scale of 10pts)

i)	Absence of Free Body Diagram when needed		-3pts
ii)	Absence of proper vector or tensor(matrix) notation when needed		-2pts
iii)	Incorrect units		-1pt
iv)	Correct answer without correct work	1/2	credit
v)	The lowest quiz and homework grades will be dropped at end of semester		

*** Regular attendance is strongly encouraged; Poor attendance most often results in a failing grade.

*** Please feel free to ask questions during class or during office hours.

ENME 220-MECHANICS OF MATERIALS

Material		No of Classes
Ch. 1, 1-5	Introduction and Review of Statics	1
Ch. 2, 1-12	Analysis of Stress-Concepts and Definitions	5
Ch. 3, 1-7	Analysis of Strain-Concepts and Definitions	3
Ch. 4, 1-5	Material Properties and Stress-Strain Relationships	2
Ch.5, 1-6, 8, 9, 11	Axial Loading Applications and Pressure Vessels	3
Ch. 6, 1-5, 7-9, 13	Torsional Loading	3
 Ch. 7, 1-8, 10, 13-14, 16-17	Flexural Loading: Stresses in Beams	5
Ch.8, 1-4, 6, 9	Flexural Loading: Beam Deformations	2
 Ch. 9, 1-3, 4, 6	Columns	2
	Review & Special Topics	1
	Exams	2
Total Classes		29

Text: <u>Mechanics of Materials</u>, Sixth Edition, W.F. Riley, L.D. Sturges and D.H. Morris.

1st REVISION (8/29/13) ENME 220-MECHANICS OF MATERIALS - Fall 2013 P.G. Charalambides

UNIVERSITY OF MARYLAND BALTIMORE COUNTY

Department of Mechanical Engineering

Period	Date	Day	Reading Chapter-sections	Quizzes & Exams	HW Problems [‡] To be graded	Practice HW Problems♥
1	8/29	Th	Ch. 1, 1-5		HW#1	1.6, 1.12, 1.15, 1.54
2	9/3	Tue	Ch. 2, 1-5	Q-0	HW#2	2.2, 2.8, 2.14, 2.32
3	9/5	Th	Ch. 2 6-7	Q	HW#3	2.36, 2.37, 2.48, 2.60
4	9/10	Tue	Ch. 2, 8-10		HW#4	pr1, pr2, pr3, pr4
5	9/12	Th	Ch. 2, 10-12		HW#5	pr1, pr2, pr3, pr4
6	9/17	Tue	Ch. 2, 10-12		HW#6	pr1, pr2, pr3, pr4
7	9/19	Th	Ch. 3, 1-3	Q	HW#7	pr1, pr2, pr3, pr4
8	9/24	Tue	Ch. 3, 4-6		HW#8	pr1, pr2, pr3, pr4
9	9/26	Th	Ch. 3, 7		HW#9	pr1, pr2, pr3, pr4
10	10/1	Tue	Ch. 4, 1-3		HW#10	pr1, pr2, pr3, pr4
11	10/3	Th	Ch. 4, 4-5	Q	HW#11	pr1, pr2, pr3, pr4
12	10/8	Tue	Ch. 5 1-3		HW#12	pr1, pr2, pr3, pr4
13	10/10	Th	Ch. 5 4-5		HW#13	pr1, pr2, pr3, pr4
14	10/15	Tue	Ch. 5, 6,8,9,11		HW#14	pr1, pr2, pr3, pr4
15	10/17	Th		EXAM I (Chapters 1-5)		
16	10/22	Tue	Ch. 6, 1-4		HW#15	pr1, pr2, pr3, pr4
17	10/24	Th	Ch. 6, 5, 7	Q	HW#16	pr1, pr2, pr3, pr4
18	10/29	Tue	Ch. 6, 8-9, 13		HW#17	pr1, pr2, pr3, pr4
19	10/31	Th	Ch. 7, 1-4		HW#18	pr1, pr2, pr3, pr4
20	11/5	Tue	Ch. 7, 4-7		HW#19	pr1, pr2, pr3, pr4
21	11/7	Th	Ch. 7, 5-8	Q	HW#20	pr1, pr2, pr3, pr4
22	11/12	Tue	Ch. 7, 10, 13, 14		HW#21	pr1, pr2, pr3, pr4
23	11/14	Th	Ch. 7, 16-17		HW#22	pr1, pr2, pr3, pr4
24	11/19	Tue	Ch. 8 1-3		HW#23	pr1, pr2, pr3, pr4
25	11/21	Th	Ch. 8, 4, 6, 8	Q	HW#24	pr1, pr2, pr3, pr4
26	11/26	Tue	Ch. 8, 8-10		HW#25	pr1, pr2, pr3, pr4
	11/28	Th		THANKSGIVING BREAK		pr1, pr2, pr3, pr4
27	12/3	Tue		EXAM II (Chapters 5-8)		
28	12/5	Th	Ch. 9, 1-3	- '	HW#26	pr1, pr2, pr3, pr4
29	12/10	Tue	Ch. 9, 3, 4?, 6?		HW#27	pr1, pr2, pr3, pr4
	12/12	Th		Study Day		

FINAL EXAM WEEK Friday, December 13 – Thursday, December 19, 2013

Homework problems to be graded will be posted on course blackboard site.Practice problems are assigned from course textbook.

DISCUSSION SESSIONS-Rules and Expectations

ENME 220/220H -- FALL 2013

Instructor: Panos G. Charalambides

Discussion	220-02	9:00-9:50am. Fridays. Room: ITE 231.
Discussion	220-03	10:00-10:50am. Fridays. Room: ITE 241.
Discussion	220-04	11:00-11:50am. Fridays. Room: ITE 237.
Discussion	220H-02	12:00-12:50pm. Thursdays. Room: ENG112.

Text: *Mechanics of Materials*, Sixth Edition, W.F. Riley, L.D. Sturges and D.H. Morris.

Discussion Session Rules

The discussion sessions will feature an active learning component wherein the student actively participates in solving example problems. Each Discussion session will be supervised/delivered by a team of two Assistants (a combination of Graduate Teaching Assistants, and Graduate and Undergraduate Teaching Fellows). The Assistants will maintain an attendance log. The classroom doors will be closed promptly at the start of each session and no students will be allowed in the classroom after the closing of the doors.

At the beginning of each Discussion session, the Teaching Assistants will distribute a handout featuring four to six problems mainly taken from the textbook. Students will be given 25 minutes to work either individually or in teams of two or three to solve the problems. The Assistants will take the second half of the Discussion period to answer questions and possibly solve one or two problems identified by the students.

IMPORTANT

At the end of each session each student will be asked to turn in his/her work completed during the session. The work will be evaluated by the Assistants and returned to the students at the next session. No Discussion work will be accepted outside the Discussion session. Discussion session work is weighted at 10% of the final grade.

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ENME220H-MECHANICS OF MATERIALS (Honors-Fall 2013)

Expectations --- 6 6 : Tuesdays, 12:00 noon-12:50pm. ENG112 --- 6 Address theoretical concepts and complete relevant theoretical problems on a weekly basis. --- 66 6 6 . --- 66 6 6 . . Mechanics of Materials. Infrastructure . . .

We shall focus on buildings, roads, bridges, parking garages, traffic and placement of traffic lights/signals/signs, water management/storage, waist management, energy storage and distribution, green energy and other infrastructure related engineering structures and technologies.

6 6 6 6 6 6 6 ----- Original Message ------Subject:Re: Advancing UMBC's BreakingGround initiative Date:Mon, 26 Aug 2013 14:57:44 +0000 From: Chow, Rudy < Rudy. Chow@baltimorecity.gov> To:Panos Charalambides <panos@umbc.edu> CC:Foxx, Al <Al.Foxx@baltimorecity.gov>, panos@umbc.edu <panos@umbc.edu>, sbradley@umbc.edu <sbradley@umbc.edu>, eggleton@umbc.edu <eggleton@umbc.edu>, Black, Eloise <Eloise.Black@baltimorecity.gov> Hello Panos, It is great to hear from you. I would very much enjoy coming back to UMBC to further our discussion on Baltimore's Infrastructure crisis in the coming semester. I will have Ms. Black work with you on my availability. Regards, Rudy 6 6 6 6 6 6 6 6 6 6 6 6 6

	6	6 :		90%
6	66	6 6	6 :	5%
6	6 :			10%
	6 :			5%

Honor's Section Syllabus

1	9/3	.12 7	6 6	
2	9/10	.2 8- 12	6	?
3	9/17	.23 3	6	?
4	9/24	.3 4- 7	6 6 6 6	
5	10/1	.4 1- 5	6 6 6	
6	10/8	.5 1- 5	6 6 6 6	
7	10/15	.15	: 6 A	
8	10/22	.6 1-7	6	
9	10/29	.6 8 9 13		
10	11/5	.7 1- 8		
11	11/12	.7 10,13.14,16,17		
12	11/19	.8 1-3	6. 6	
13	11/26	.8 4, 6,8,9,10	6. 6	
14	12/3	.8& .91-3		
15	12/9	.91-6	6 6	

P. G. Charalambides Fall 2013

ENME 220-MECHANICS OF MATERIALS

Weekly TA & Teaching Fellows Office Hours

Time	Monday	Tuesday	Wednesday	Thursday	Friday
Thic	wonday	Tucsuay	weunesuay	Thursday	Thuay
8:00-8:30 am					
8:30-9:00 am					
					ENME220
9:00-9:30 am					DISC 02
					9-9:50am
9:30-10:00 am					SM&VR
		ENME220		ENME220	ENME220
10:00-10:30 am		Regular		Regular	DISC 03
		Lecture		Lecture	10-10:50am
10:30-11:00 am		10-11:15am		10-11:15am	JA,MR&SB
		PUP105		PUP105	ENME220
11:00-11:30 am		PGC		PGC	DISC 04
					11-11:50am
11:30-12:00 noon					KK&SM
10.00		Honors		Honors Section	
12:00 noon -		Section		DISC	
1:00pm	1.0.00	PGC	1 2 00		
1.00 1.20	1-2:00pm	1-2:00pm	1-2:00pm	1-2:00pm	
1:00 – 1:50 pm	ENG229B	ENG229B	ENG229B	ENG229B	
1:30 – 2:00 pm	Jacob Alvarez	Veronica Ruf	Jacob Alvarez	Veronica Ruf	
	2-3:00pm	2-3:00pm	2-3:00pm	2-3:00pm	
2:00 – 2:30 pm	ENG229B	ENG229B	ENG229B	ENG229B	
2:30 – 3:00 pm	Sandra Murcia	Kourosh Kalayeh	Sandra Murcia	Kourosh Kalayeh	
	3-4:00pm	Panos	3-4:00pm	Panos	
3:00 – 3:30 pm	ENG229B	Charalambides	ENG229B	Charalambides	
		ENG209		ENG209	
5:30 – 4:00 pm	4 5 00	3-4:00pm	4 5 00	3-4:00pm	
4.00 4.20	4-5:00pm	4-5:00pm	4-5:00pm	4-5:00pm	
4:00 – 4:30 pm	ENG229B	ENG229B	ENG229B	ENG229B	
4.30 5.00 pm	Bonadies	Michael Roberts	Bonadies	Michael Roberts	
4:30 – 3:00 pm	Donautes	whenaet Roberts	Donaules	whenaet Roberts	1

Prerequisite Verification Form

ENME220-Mechanics of Materials

Fall 2013

Instructor: Panos G. Charalambides

The prerequisites for ENME220 are:

ENES110-Statics MATH 152-Calculus II PHYS-121-Physics

Student enrolled in ENME220 must have completed above courses with a C or better.

This is to verify that I,

Student Name

SSN:_____

meet all class prerequisites listed above.

_Date_____

Student Background Data Form (Optional!)

Name	
Age	-
Year in school	-
Home Town	
College & major	
Why did you choose your major?	

Interests:

Background & Miscellaneous: