CALCULUS   III

MATH 2210, CRN 30777, Spring 2009

http://faculty.weber.edu/aghoreishi/Math2210_s09/Math2210_s09.asp/

Prerequisite: Math 1220, with a grade of C or better, or placement test.

Text: **Required:**   Calculus by James Stewart, 5th Edition, Brooks/Cole, 2002
Optional: Multivariable Study Guide by Richard St. Andre, ISBN 0-534-39358-6.
Multivariable Student Solution Manual by Dan Clegg and Barbara Frank,
ISBN 0-534-39360-8. (A copy of the above two optional books is available in
Mathematics Students' Room, B4, Rm. 507.)
Div, Grad, Curl And All That by H. M. Schey, ISBN 0-393-96251-2. (This book has
an excellent informal explanation of those concepts.)

Class Meetings: MTWF 12:00-12:50, B4 Rm. 518.

Instructor Information: Dr. Afshin Ghoreishi, B4 Rm. 505A, http://faculty.weber.edu/aghoreishi/,
MWF 10:00-10:50, and T 10:00-11:50. At other times, you can see me whenever I am in my office and not busy.
You can also see me by making an appointment.

Procedures: I will try to answer a few questions at the beginning of each class, but this time will be limited. Be
prepared for each class by working on prior homework and reading the book ahead of time. You are encouraged
and expected to read the book on your own. Utilize office hours and other sources of tutoring.

We will have weekly homework, three 1-hour exams and a comprehensive 2-hour final exam. **Do not enter the
class late & do not come to class if you have to leave early. Turn off pagers, cell phones and other such
disruptive devices. Do not text message.** Failure to follow these basic courtesies may result in a failing grade.

Homework: A problem list composed of two parts is attached. To be successful in this class you should be able
to solve all of them. I will collect all problems listed under the heading "Turn-In Problems". Every Tuesday I
will announce the sections which will be due that week. Homework will be due **Friday 1:00 pm**, in the gray
plastic holder on my office door.

Do not solve two problems side-by-side, write only on one side of each page and staple your homework.
Write your name on the top center position of the front page and number your pages as, for example; 1/7, 2/7,
... , 7/7 (if there are a total of 7 pages), on the top right hand corner of each page. **No** late homework will be
accepted.

The ability to use a computer algebra system was a co-requisite for both Calculus I and II. Therefore, you should
be familiar with a computer algebra system, CAS. Some of the homework problems require use of a computer
algebra system. Homework also includes two labs using Mathematica commands relevant to our course. If you
are familiar with another CAS, you may do the labs using that CAS. To learn Mathematica, either take Math 1200,
or learn it on your own by working through the lab titled "An Introduction to Mathematica" immediately. Both
labs are available on the course website. **The lab "An Introduction to Mathematica" is due before the
Spring Break and the lab "Mathematica Commands" is due the last day of class.**

Exams: You may use a scientific or a graphics calculator, but not any calculator with a computer algebra system. Sample exams will be available from my website: http://faculty.weber.edu/aghoreishi. **No** make-up exam will be given.

1st Exam	Fri,	Feb	6 (tentatively chapters 13 & 14)
2nd Exam	Fri,	Mar	20 (tentatively chapter 15 and sections 16.1-16.4)
3rd Exam	Fri,	Apr	17 (tentatively sections 16.5-16.9 & 17.1-17.6)
Final	Wed,	Apr	29 (12:00-2:00)

Your exam preparations must include review of lecture notes and homework problems. After review, use the sample exam as a test of readiness. If you can not confidently, quickly and independently solve a sample exam's problems correctly, you will not do well on that exam.

Extra Credit: You can earn 10 extra points by correctly solving and submitting your solution to any problem posted in certain mathematics journals. I will give out such problems and will also provide some advice, upon your request. You can earn up to 20 extra points.

Grading: Exams will be curved as needed, but a minimum standard will be retained regardless of the class performance. A typical exam scale is [0, 55) E, [55, 65) D range, [65, 77) C range, [77, 88) B range, [88, 100] A range. Homework and Computer Labs will have the standard scale and you will be given the opportunity to replace your lowest homework grade with your grade on a special assignment at the end of the semester. **Excessive absence will result in a grade of UW.**

One-hour exams; 100 points each	300 points	($18.\overline{18}$	percent each)
Homework	100 points	($18.\overline{18}$	percent)
Final Exam	150 points	($27.\overline{27}$	percent)
Extra Credit (optional)	*20 extra points*		

Total 550 points

It is possible to customize the above percentage values for best numerical representation of your learning. If you would like to take advantage of this, you must talk to me before the 2nd exam.

Miscellaneous Information

Other Important Dates:

Martin Luther King Holiday	Jan	19
Last day to cancel a class	Jan	23
Presidents' Day Holiday	Feb	16
Last day to drop with a grade of W	Mar	6

If you decide to drop this class, please inform me of your decision.

Extra Help: Room 507 in B4 is a perfect place to study! The website http://weber.edu/Tutoring should contain all tutoring information. The following is a partial list of tutoring sources.

1. Solution Space, B4 519.
2. Math Tutoring Lab, SC 164, 626-math (6284).
3. Student Support Services, SC 260, 626-7009.
4. Tutoring Services, SC 160, 626-7484.
5. Supplemental Instruction, SC 262. SI schedule for all classes should be posted.

	Course Coverage and Problem List© for Calculus III For problems with superscript ^{M}, use Mathematica or a computer algebra system.	
Section	**Problems**	**Turn-In Problems**
13.1	4-7, 9, 10, 11, 13, 15, 16, 19, 20, 22, 24, 30, 34, 35, 37, 38, 40	6, 10, 16, 20, 30, 38
13.2	1, 4-7, 10, 14, 17, 20-27, 31, 32, 34, 35	6, 10, 14, 22, 26, 32
13.3	1-3, 5, 7-9, 11, 12, 16, 21, 23, 26, 35, 36, 38, 40, 41, 43, 48, 49, 51, 52, 58	8, 12, 16, 26, 38, 48
13.4	2, 3, 6-11, 13-15, 23-26, 32, 34, 36, 38, 39, 40, 45	8, 14, 24, 26, 36, 40
13.5	1-5, 7-14, 16, 17, 19-24, 26, 28, 30, 32, 33, 35, 36, 40, 48, 51-54, 57, 67, 69, 72	16, 20, 30, 32, 40, 52
13.6	1, 4, 6, 7, 10, 12, 15, 16, 18, 19, 21-28, 32, 33, 37^M, 46	4, 6, 10, 16, 24, 42
13.7	1-5, 7, 9, 10, 12, 13, 16, 18, 19, 21-25, 29, 31, 32, 67^M	4, 10, 18, 26, 28, 32
14.1	1, 4, 5, 8-12, 14, 19-25, 27^M, 33, 35, 36, 40	4, 12, 14, 24, 36, 40
14.2	3, 4, 9, 14-17, 21, 22, 24-26, 27^M, 32, 36, 39, 40, 41, 47	4, 14, 22, 24, 36, 40
14.3	1-5, 9-11, 14-16 (Do not find $\mathbf{N}$(t)), 18	2, 10, 16 (Do not find $\mathbf{N}$(t)), 18
14.4	1, 3-5, 12, 16, 17^M, 19, 20, 22, 25-27	4, 12, 16, 20, 22, 26
15.1	2, 6, 7, 9, 14, 15, 18, 25, 26, 29-34, 38, 40, 43, 51^M, 53-58, 62, 65^M	2, 14, 18, 26, 40, 54
15.2	1, 3-6, 8, 10-13, 15, 24, 25^M, 27, 28, 31, 36, 37, 39	8, 12, 16, 28, 36, 38
15.3	1-3, 5, 6, 8, 11^M, 13-18, 20, 22, 24, 30, 33, 36, 43, 44, 46-48, 53, 54, 57, 58, 65-69, 71	2, 18, 20, 48, 58, 66
15.4	6, 7^M,12, 14-17, 19-21, 24, 27, 28, 42	2, 14, 19, 20, 24, 42
15.5	1, 3, 4, 6, 8, 9, 12, 14, 15, 17, 18, 21, 22, 27, 34, 36, 37, 39, 43, 44, 46, 47	6, 8, 14, 22, 34, 36, 46
15.6	1, 3-8, 10, 11, 14, 16, 20-23, 27, 28, 30-32, 34-37, 41, 47, 49, 52, 53, 63	6, 14, 20, 22, 28, 32
15.7	1, 3, 4, 7^M, 8^M, 10^M, 14^M, 15^M, 19^M, 20^M, 27-29, 32, 38, 41, 42, 44, 45, 46, 48, 49	4, 8 & 10 (Do not graph), 28, 32, 38
15.8	1, 5, 6, 8, 10, 13, 19, 23, 24, 26, 27, 29, 38, 39	6, 8, 10, 18, 26, 38
16.1	1, 2, 5-7, 12, 13, 17, 18	2, 6, 8, 12, 18
16.2	1, 2, 5-12, 14, 17-22, 24-26, 29, 33, 35^M	8, 12, 14, 16, 22, 26
16.3	2, 3, 5, 6, 8, 9, 13-15, 17, 19, 21-23, 25, 28, 31, 33^M,37, 39, 40-43, 45, 46, 50, 54	6, 14, 22, 28, 40, 44
16.4	1, 3, 4, 6-11, 13-15, 17, 23, 25, 27, 29, 30, 32-36	8, 10, 14, 22, 30, 32

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Section	**Problems**	**Turn-In Problems**
16.5	1, 5-7, 9, 11, 12, 14-17	6, 12, 14, 16
16.6	1-4, 6, 8, 10, 11, 22-24	2, 4, 6, 10, 12, 24
16.7	1, 2, 5-8, 11, 12, 14, 15, 17, 18, 20, 25, 26, 28, 31, 34, 37, 39, 41[M], 47	6, 12, 14, 18, 26, 34
16.8	1, 2, 4, 5, 6, 8, 9, 13, 17, 19, 20, 22, 23, 30, 31[M], 32[M], 33-36	8, 20, 22, 30, 34, 36
16.9	1-4, 7-10, 12, 13, 17, 20, 21, 24	2, 8, 12, 20, 24
17.1	1-7, 11, 12, 17, 18, 21-26, 27[M], 29, 30	2, 6, 12, 22, 24, 26
17.2	1-6, 9, 14-16, 17-22, 23[M], 37-39	4, 8, 14, 16, 20, 38
17.3	1-9, 11-16, 19-21, 23, 27, 28, 32, 33	6, 8, 12, 16, 20, 32
17.4	1-4, 5[M], 8-10, 13, 14, 16-18, 21-23	4, 8, 10, 14, 16, 18
17.5	1-16, 19-22, 26-28, 31	4, 10, 14, 20, 22, 26
17.6	3, 4, 12, 13, 14, 18, 19, 22, 31 & 32 (Do not graph), 36, 39, 40, 42, 51[M]	4, 12, 18, 32 (Do not graph), 36, 40
17.7	3-6, 8, 11, 12, 15-17, 19-21, 24, 25, 29[M], 36, 39, 40	4, 6, 12, 16, 20, 24, 40
17.8	1-4, 6-8, 10, 11[M], 12[M], 13-15, 17, 20	2, 4, 8, 10, 12(a), 14
17.9	1-5, 7-10, 12-14, 16, 20, 22, 24, 25, 28	4, 8, 10, 12, 14, 28
17.10		