

SYLLABUS

MTH 111 – Calculus I, Section B – Fall 2022

Instructor: Dr. Sofya Chepushtanova

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Class Meetings:

- MTWRF 01:00-01:50 pm, SLC 424

Office Hours: SLC 408, MTR 10:00-10:50 am and MW 12:00-12:50 pm or by appointment.

Course Description and Objectives: Calculus of functions of one variable. Topics include functions, limits and continuity, derivatives and integrals. Course will focus on applying conceptual aspects of calculus to modeling and solving problems from across the sciences and engineering.

Students successfully completing this course should:

- Understand the notions of limit, derivative, and integral and their applications in understanding the graphs of functions and computing areas.
- Be able to effectively compute limits, derivatives and some antiderivatives.
- Be able to apply limits and derivatives to determine the concavity and extrema of functions and sketch the graphs of functions.
- Be able to estimate limits, derivatives and some definite integrals and sketch the graphs of functions using a graphing calculator.
- Be able to apply limits, derivatives and integrals to solve problems in the sciences and engineering.

Text (*optional - purchase not required*):

University Calculus, Early Transcendentals, 4th edition, by Hass, Weir, and Thomas; Addison/Wesley Publishing, Inc.; ISBN 9780134995540.

Required MyLab Math access: We will be using the publisher's online MyLab Math as a resource and as a source for required online assignments, so you will have to purchase an online access code. This code will give you access to an online electronic copy of the text for the duration of the class.

24 month code: ISBN 9780135183717; 18 week code: ISBN 9780135910993.

You must register for the online MyLab Math course by midnight on Wednesday, September 7th. Failure to do so may result in removal from the class roster and dismissal from the course.

Prerequisites: Student must have completed MTH 100 *with a grade 2.0 or better* or meet Department of Mathematics and Computer Science placement criteria.

Attendance: Attendance in this class is MANDATORY. Attendance at all classes is expected (unless you are sick), and repeated absence is sufficient grounds for failure from the course. I

will adhere to the Wilkes University Policy regarding class attendance policies (see the Wilkes Student Handbook). In particular, after 5 consecutive instructional hours of unexcused absences from a class, students may be readmitted to the class only by action of the Office of Student Affairs and the department chairperson concerned. *Remember that poor attendance is a major contributor to poor performance!*

Calculator: Calculators can be used as a helpful tool to analyze functions. You may want a calculator to help with homework, but NO calculators will be allowed (or needed) on exams. For your homework, a useful online graphing calculator is Desmos:
<https://www.desmos.com/calculator>.

Suggested Practice Problems: For your practice, I offer a number of *suggested* homework problems for each section from the textbook, see the last page the syllabus. This homework will not be collected, but you are encouraged to do it to develop your calculus skills.

MyLab Math (Online) Homework and Quizzes: There will be regular MyLab Math online homework assignments and quizzes. The lowest three homework scores will be dropped, and the rest will be added together and will count 5% toward your final grade. (Note that the orientation assignment is not graded, but you are recommended to go through it to learn how to use MyLab Math.) The lowest three quizzes scores will be dropped, and the rest will be added together and will count 10% toward your final grade. *Note: No makeups will be given for any missed homework or quiz.*

Exams: There will be four midterm exams, they will count 55% toward your final grade (13.75% each). There will be a final exam, given during finals week, which will count 30% toward your final grade. ***Assuming your attendance in class is satisfactory, your final exam grade will be substituted in place of your lowest midterm exam score if it is higher than your lowest exam score.*** No makeups will be given for exams unless there is a documented justification on why the student was unable to take the exam on the specified date. The student should make every effort to contact me IN ADVANCE if he/she is unable to attend an examination to make such a request.

Grade Distribution: Your grade in this course is calculated from the following components:

5% (Homework) + 10% (Quizzes) + 55% (Midterms) + 30% (Final) = 100%
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and your final grade will be assigned from the total percentage you earn as follows:

<i>Percentage</i>	<i>Grade</i>
90 – 100%	4.0
85 – 89%	3.5
80 – 84%	3.0
75 – 79%	2.5
70 – 74%	2.0
65 – 69%	1.5
60 – 64%	1.0
0 – 59%	0.0

However, there is an additional restriction for a failing grade on the final exam: if a student does not score at least 50% on the final (i.e., at least 100 out of 200 possible points), the highest grade they are eligible for is a 1.5.

Expectations: In addition to good attendance, you should plan to study 2-3 hours outside of class for each hour in class. You are expected to *read the textbook for comprehension*. It gives a detailed account of the material of the course. *Note that it is your responsibility to learn the material*. The instructor's job is primarily to provide a framework, to guide you in doing your learning of the concepts and methods that comprise the course. If you are experiencing difficulty, go to your instructor's office hours for extra help. Form a study group of classmates who are also committed to mastering calculus. Mathematics is not a spectator sport, you must practice the skills yourself to learn the material.

Drop Policy: If you wish to drop from the course, I will give my permission during the first ten weeks of the semester. Thereafter you will need the permission of the Dean. Be aware that poor performance in the course will not be a sufficient reason for the Dean's permission to be granted.

Academic Honesty: By handing in homework, quizzes, and exams you certify that this is your own work. You are encouraged to discuss homework solution strategies with fellow students but the final submission **MUST BE YOUR OWN**. Misrepresenting someone else's work as your own (plagiarism) or doing MyMathLab problems with the aid of a computer algebra system are examples of cheating. If there is evidence that exam work you hand in is not your own, the first time you will receive a zero on the exam and the second time you will receive a grade of 0 in the course. **Put simply: do not cheat. I have no patience for academic dishonesty.**

Cell Phones: should be switched to silent mode (or turned off), and put out of sight during class time. **NOTE: THE USE OF CELL PHONES DURING EXAMS IS EXPRESSLY FORBIDDEN AND WILL RESULT IN A GRADE OF 0.**

Email Etiquette: Please refer to the following tutorial on how to communicate with your instructor via email: <https://www.math.uh.edu/~tomforde/Email-Etiquette.html>. View an email to a professor as a professional interaction. How you choose to interact conveys your level of seriousness and professionalism.

Next two pages: tentative course schedule and a list of suggested exercises

***Tentative* Schedule of Lectures (Sections), Assignments, and Exams
for Calculus I Fall 2022**

Week	Monday	Tuesday	Wednesday	Thursday	Friday
8/29	Syllabus, 1.1	1.1, 1.2	1.3	1.5, 1.6	Practice
9/5	<i>Labor Day</i>	1.6	2.1	2.2	Practice ML orient. and ML1 Due
9/12	2.2	2.3 (briefly), 2.4, Quiz 1 due	2.4	2.4, 2.5	Practice ML2 Due
9/19	2.5	2.5, 2.6 Quiz 2 due	2.6	3.1	Review ML3 Due
9/26	Exam I	3.1, 3.2 Quiz 3 due	3.2	3.3	Practice ML4 Due
10/3	3.3	3.4 Quiz 4 due	3.4, 3.5	3.5	Practice ML5 Due
10/10	3.6	3.6, 3.7 Quiz 5 due	3.7	<i>Fall Recess</i> ML6 Due	
10/17	3.8	3.8, 3.9 Quiz 6 due	3.9	3.10	Review ML7 due
10/24	Exam II	3.10 Quiz 7 due	3.10	3.11	Practice ML8 Due
10/31	4.1	4.1, 4.2 Quiz 8 due	4.2	4.3	Practice ML9 Due
11/7	4.3	4.4 Quiz 9 due	4.4	4.5	Practice ML10 Due
11/14	4.6	4.6 Quiz 10 due	4.7 (briefly), 4.8	4.8	Review ML11 Due
11/21	Exam III	5.1 Quiz 11 due	<i>Thanksgiving</i>		ML12 Due
11/28	5.1, 5.2	5.2 Quiz 12 due	5.3	5.3	Practice ML13 Due
12/5	5.4	5.4, 5.5 Quiz 13 due	5.5	5.6, Review	Exam IV ML14 Due
12/12	5.6	<i>Final Exams Week: 12/12 - 12/19</i>			ML15 Due

**Suggested Practice Problems from University Calculus, 4th edition, by Hass,
Weir, and Thomas - Not Graded (MTH 111 Calculus I)**

Section	Practice Problems	Section	Practice Problems
1.1	1, 3, 5, 7, 13, 21, 23, 25, 27, 31, 37, 41, 49, 55, 73, 75	3.9	1, 5, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 31, 33, 39, 41, 43, 45, 47, 53, 59
1.2	1, 3, 5, 11, 15, 17, 23, 27, 35, 59, 67, 71, 79	3.10	1, 3, 5, 7, 9, 15, 21, 23, 25, 31, 43
1.3	1, 7, 9, 11, 15, 21, 23, 27, 39, 43, 51, 53	3.11	linearization: 1, 3, 5, 11, 13, 17
1.4	(playing with calculator/software) 3, 15, 17, 31, 33, 35	4.1	5, 7, 11-14, 21, 25, 29, 33-41 odd, 45-69 odd, 73, 77, 79, 83
1.5	1, 7, 15, 23, 29, 31	4.2	3, 7, 9, 11, 13, 15, 21, 23, 29, 31, 39, 43, 47, 51, 55, 63, 67
1.6	1, 3, 5, 7, 9, 11, 17, 19, 31, 45, 47, 51, 55, 63, 67, 69, 71, 73, 81	4.3	7, 13, 15, 17, 21, 27, 31, 33, 35, 39, 41, 43, 45, 53, 55, 57, 59, 61, 63, 67, 69, 73, 75, 77, 79
2.1	1, 7, 19, 25	4.4	1, 3, 5, 7, 9, 15, 19, 23, 27, 31, 33, 39, 43, 49, 51, 53, 55, 57, 81-105 odd, 115, 121
2.2	1, 3, 5, 9, 11, 21, 23, 27, 33, 37, 47, 51, 57, 59, 63	4.5	1, 3, 5, 9, 15, 19, 25, 27, 29, 33, 35, 37, 41, 49, 51, 55, 61, 63, 69, 71, 75, 77, 87
2.3	7, 11	4.6	1, 3, 5, 7, 9, 11, 25, 29, 33, 37, 39, 47, 51, 55, 57, 63
2.4	1, 3, 5, 9, 15, 23, 27, 29, 33, 39, 43	4.7	optional: 1, 5, 7, 9, 10, 11, 13, 19, 25
2.5	1, 3, 5, 7, 9, 11, 13, 19, 23, 25, 29, 31, 33, 39, 43, 45, 55, 65	4.8	1, 5, 9-69 odd, 73, 77, 81-89 odd, 93, 95, 99, 101, 105, 109, 113, 115, 119, 125
2.6	1, 3, 9, 13, 15, 17, 23, 27, 33, 37, 41, 45, 47, 49, 51, 53, 57, 59, 61, 63, 67, 69, 71, 81, 83, 99, 101	5.1	1, 5, 9, 19
3.1	1, 3, 5, 7, 11, 15, 21, 23, 25, 27, 31, 35, 37	5.2	1, 5, 7, 9, 13, 15, 19, 23, 25, 29, 31, 33, 39, 43, 45
3.2	1, 3, 5, 17, 23, 27-30, 31, 33, 37, 45, 47	5.3	1-19 odd, 27, 61, 73, 75
3.3	3, 5, 9, 13, 19, 25, 29, 35, 39, 41, 51, 53, 55, 57, 63, 67, 69, 75	5.4	1, 5, 9, 13, 15, 19, 23-33 odd, 39, 43, 45, 53, 57, 59, 65, 71, 75, 81, 83
3.4	1, 5, 7, 11, 17, 21, 25, 31	5.5	3, 5, 7, 11, 13, 15, 17, 21, 25, 29, 31, 35, 39, 43, 45, 47, 51, 55, 57, 61, 65, 67, 73, 79
3.5	3, 7, 11, 15, 19, 23, 29, 33, 35, 37, 39, 43, 45, 49, 55, 57, 59, 61, 67	5.6	(substitution) 1, 3, 7, 11, 15, 17, 23, 25, 27, 29, 35, 39, 45; (area between curves) 49-69 odd, 75, 77, 79, 83, 87, 89, 91, 95-107 odd, 111
3.6	1, 5, 9, 13, 17, 23, 27, 31, 35, 41, 45, 51, 57, 63, 67, 69, 71, 75, 85, 87, 89, 91, 93, 95, 99		
3.7	1, 5, 11, 15, 17, 21, 25, 27, 29, 31, 35, 39, 41, 43, 51a		
3.8	1, 5, 11, 15, 19, 23, 27, 31, 35, 39, 55, 59, 63, 65, 67, 71, 75, 81, 85, 89, 91, 93, 95, 99		