

# SYLLABUS

## MTH 111 – Calculus I, Section F – Spring 2020

**Instructor:** Dr. Sofya Chepushtanova (<http://chepusht.mathcs.wilkes.edu>)

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**Class Meetings:**

- MTWRF 08:00-08:50 am, room SLC 403

**Office Hours:** room SLC 410, MWF 09:00-09:50 am and 02:00-02:50 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.

We will study the basic concepts of differential calculus which includes the study of some fundamental properties of real-valued functions. 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, January 22nd.** 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, 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:** In this course, calculators can be used as a helpful tool to help 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 (tentatively scheduled for 2/10, 3/16, 4/8, and 4/27), 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:

$$5\% \text{ (Homework)} + 10\% \text{ (Quizzes)} + 55\% \text{ (Midterms)} + 30\% \text{ (Final)} = 100\%$$

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.

**Tentative Schedule of Lectures (Sections), Assignments, and Exams  
for Calculus I Spring 2020 (Dates are Subject to Change)**

Week of	Monday	Tuesday	Wednesday	Thursday	Friday
1. Jan 12	Syllabus, 1.1	1.1, 1.2	1.3	1.5, 1.6	Group work
2. Jan 19	<i>MLK Day</i>	1.6	2.1	2.2	Group work ML orient. and ML1 Due
3. Jan 26	2.2	2.3 (briefly), 2.4, Quiz 1 due	2.4	2.5	Group work ML2 Due
4. Feb 2	2.5	2.6 Quiz 2 due	2.6	3.1	Review/Group work ML3 Due
5. Feb 9	<b>Exam I</b>	3.1, 3.2 Quiz 3 due	3.2	3.3	Group work ML4 Due
6. Feb 16	3.3	3.4 Quiz 4 due	3.4, 3.5	3.5	Group work ML5 Due
7. Feb 23	3.6	3.6, 3.7 Quiz 5 due	3.7	3.8	Group Work ML6 Due
8. Mar 1	<i>Spring Break</i>				Quiz 6 due
8. Mar 8	3.8, 3.9 ML 7 due	3.9	3.10 Quiz 7 due	3.10	Review/Group Work ML8 Due
9. Mar 15	<b>Exam II</b>	3.11 (briefly), 4.1 Quiz 8 due	4.1	4.1, 4.2	Group work ML9 Due
10. Mar 22	4.2	4.3 Quiz 9 due	4.4	4.4	Group work ML10 Due
11. Mar 29	4.5	4.5, 4.6 Quiz 10 due	4.6	4.6	4.7 (briefly), 4.8 ML11 Due
12. Apr 5	4.8	Review/Group Work	<b>Exam III</b> Quiz 11 due	<i>Holiday Recess</i> ML12 Due	
13. Apr 12	5.1	5.1, 5.2 Quiz 12 due	5.2	5.3	Group Work ML13 Due
14. Apr 19	5.3	5.4 Quiz 13 due	5.4, 5.5	5.5	Review/Group work ML14 Due
15. Apr 26	<b>Exam IV</b>	5.6	5.6, Review	<i>Final Exams</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		