MATH 170 Calculus I
Summer 2017 Syllabus

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This syllabus is a contract. It is meant to tell you what you can expect of me, and what I will expect of you. It is a binding document you should read and understand thoroughly.

1 Course Description

This is the initial course in a sequence of courses on the fundamental ideas of the calculus of one variable. It is here that truly significant applications of mathematics begin. Topics included are functions, continuity, limits, derivatives, maxima, minima, and antiderivatives. 4 credits.

Prerequisites: MATH 118 or MATH 112 or ALEKS placement score of 76 or higher.

2 Required Resources

Textbook: *Calculus: Early Transcendentals*, 10th Edition, by Howard Anton, Irl Bivens, and Stephen Davis.

3 Course Objectives

A student who successfully completes this course will be able to:

- recognize, define, and apply properties of functions, such as their domain, range, intercepts, and inverse;
- have an intuitive understanding of a limit and be able to evaluate a variety of limits;
- identify the discontinuities of a function that is presented either algebraically or graphically;
- compute the derivative of a function using the limit definition;
- compute the derivative of sums, products, quotients, and compositions of polynomial, trigonometric, exponential, and logarithmic functions;
- understand conceptual relationships between derivatives, rates of change, and tangent lines;
- graph polynomial and rational functions using properties of the functions and their derivatives;
- apply differentiation procedures to solve related rates and optimization problems;
- identify and evaluate limits involving indeterminate forms;
- compute definite and indefinite integrals using antiderivatives and substitution;
- understand the relationship between integration and differentiation.

4 Grading

Final Grade Calculation:

	Percentage of Final Grade
Daily Problems and Participation	25%
Chapter Quizzes (5)	10% each
Final Exam	25%

Letter Grade Scale:

If you have a weighted average of at least:	94%	90%	84%	78%	70%	65%	60%	0%
then you will earn a(n):	A	B+	B	C+	C	D+	D	F

Grade Assignment: Student grades will be determined based solely on the evaluation criteria listed in this section of the syllabus. Grades reflect proficiency in the course content as demonstrated on the graded evaluation criteria. In particular, if you want to earn an A, you need to demonstrate consistent excellence over the course of the entire term; an A on the final is not equivalent to an A in the course.

5 Homework

Attending every class is not enough; mathematics can only be learned through practice. You should expect to spend a significant amount of time on homework for this course. According to the typical 2-3 hours outside of class per week for each hour in class, it is expected that you spend approximately 18-27 hours per week every week studying the material for this course outside of class.

You need to stay up to date on homework and seek help if you cannot understand a problem after trying it on your own. If you are having trouble with a topic, come talk to me during office hours, ask questions in class, and/or seek help from a classmate.

6 In-Class Work

Each class day there will be some kind of activity - practice problems, group work, etc. Participation in these activities counts toward a significant chunk of your grade (see "Daily Problems and Participation" under the Grading section).

7 Quizzes

After we finish covering the material in each chapter, we will have an in-class quiz over the material. These quizzes are tentatively scheduled for:

- Chapter 1 - Tuesday, May 30
- Chapter 2 - Tuesday, June 6
- Chapter 3 - Monday, June 12
- Chapter 4 - Monday, June 19
- Chapter 5 - Tuesday, June 27

These dates are subject to change, if needed. Schedule changes will be announced in class.

Final Exam: The final exam will be cumulative (Chapters 0-5). Your final exam is scheduled for 4:00-6:15 PM on Thursday, June 29 in our usual classroom.

Format and Expectations: In-class quizzes and exams will not be multiple choice and you will be required to show your work to get credit. During class I will clearly indicate what I consider to be a complete solution, and what is "enough work." My expectations will be clear, and if you need further clarification you can ask questions in class or visit during office hours. You should be sure to emulate the standards modeled in class to receive full credit on in-class exams. Calculator usage is not permitted.

Make-Up Quizzes and Exams: No make-up exams will be given. If you know you are going to miss a scheduled exam for a pre-scheduled event (examples: Mercyhurst-operated sporting event, academic event for another Mercyhurst course, doctor's appointment, wedding, etc.), you must contact me via e-mail or in office hours at least seven days before the exam is scheduled to take place to arrange to take the exam early. That is, you may arrange to take the exam prior to the scheduled date and time, but you may not make an exam up after it has been administered in class. If you miss an in-class exam, you will receive a zero.

Quiz and Exam Grading: Your lowest chapter quiz grade will be replaced by your final exam, if your final exam score is higher than your lowest chapter quiz grade. A zero received from a missed quiz may be replaced by the final, no questions asked. If you miss more than one quiz, only one of your zeros will be replaced by the final exam. If you receive a zero for cheating on an quiz, that score will not be replaced by the final exam.

8 Course Policies

Attendance: Students are responsible for all information (notes, announcements, etc.) given in class, regardless of attendance.

E-mail: You can always e-mail me with course-related questions or to request an appointment outside of office hours. However, you should allow up to 2 days for a reply to your e-mail. Also, you should not e-mail me with questions about your grade; to discuss your grade please meet with me in person in my office. Sometimes, I will need to send out e-mail communications to the class. These communications will be sent to your Mercyhurst account. I will not send to any other e-mail account you may use, so be sure you have access to your Mercyhurst account and check it often enough to receive these important announcements in a timely manner.

Classroom Etiquette: Please be courteous to the instructor and your fellow students and silence your cell phone before class and do not send or receive calls or text messages during class time. Take off your headphones; do not read the newspaper or other books. Avoid disrupting the instructor and your classmates by arriving to class late or leaving class early unless absolutely necessary.

Academic Integrity: Cheating and plagiarism in any form are serious offenses and will be dealt with as such. University policy related to this issue may be found in the Student Handbook under Academic Affairs (page 6). The handbook may be found at: http://handbook.mercyhurst.edu.

Regarding Learning Differences: In keeping with college policy, any student with a disability who needs academic accommodations must call Learning Differences Program secretary at 824-3017, to arrange a confidential appointment with the director of the Learning Differences Program during the first week of classes.

Support of the Mercy Mission: This course supports the mission of Mercyhurst University by creating students who are intellectually creative. Students will foster this creativity by: applying critical thinking and qualitative reasoning techniques to new disciplines; developing, analyzing, and synthesizing scientific ideas; and engaging in innovative problem solving strategies.

Final Note: This syllabus is subject to change if deemed necessary. Any syllabus changes or addendum will be communicated in class.

9 Course Calendar

Monday	**Tuesday**	**Wednesday**	**Thursday**
May 22 Syllabus Algebra Review 1.1	*May 23* 1.1, 1.2	*May 24* 1.2, 1.3	*May 25* 1.5, 1.6
May 29 No class (Memorial Day)	*May 30* Chapter 1 Quiz 2.1, 2.2	*May 31* 2.3, 2.4	*June 1* 2.5, 2.6
June 5 Chapter 2 Review 3.1, 3.2, 3.3	*June 6* Chapter 2 Quiz 3.1-3.3 (cont) 3.4	*June 7* 3.5, 3.6	*June 8* 3.6 (cont)
June 12 Chapter 3 Quiz 4.1, 4.2, 4.3	*June 13* 4.1-4.3 (cont)	*June 14* 4.4, 4.5	*June 15* 4.8, 5.2
June 19 Chapter 4 Quiz 5.3	*June 20* 5.3 (cont)	*June 21* 5.5, 5.6	*June 22* 5.9
June 26 4.6, 5.7	*June 27* Chapter 5 Quiz Review	*June 28* Review	*June 29* Final Exam