

SYLLABUS FOR “[FALL/SPRING]” SEMESTER, 20xx
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Course Title:	Honors Calculus I	Instructor:	“[Instructor Name]”
Credit Hours:	4	Office:	“[Office Location]”
Course Number:	MATH 1920-00x	Hours:	“[Office Hours]”
Location and Time	“[Location and Time]”	email:	“[e-mail address]”

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TEXTBOOK : Thomas' Calculus: Early Transcendentals, 12th edition by M. Weir and J. Hass, Pearson.

### CATALOG DESCRIPTION

Limits, differentiation, Fundamental Theorem of Calculus, Mean Value Theorem, curve sketching, maxima/minima, definite and indefinite integrals, applications.

### PREREQUISITES

Math 1320 (College Algebra) and Math 1330 (Trigonometry) or Math 1340 (College Algebra and Trigonometry) or satisfactory placement score.

### LEARNING OBJECTIVES

The successful Calculus student should be able to apply the following competencies to a wide range of functions, including piecewise, polynomial, rational, algebraic, trigonometric, inverse trigonometric, exponential and logarithmic. A more detailed list of learning objectives is given below. At least 70% of the course time will be devoted to these essential outcomes. These objectives are listed again in the chronological list of topics at the end of this syllabus.

- x Limits: Determine the existence of, estimate numerically and graphically and find algebraically the limits of functions. Recognize and determine infinite limits and limits at infinity and interpret them with respect to asymptotic behavior.
- x Continuity: Determine the continuity of functions at a point or on intervals and to distinguish between the types of discontinuities at a point.
- x Derivatives: Determine the derivative of a function using the limit definition and derivative theorems. Interpret the derivative as the slope of a tangent line to a graph, the slope of a graph at a point, and the rate of change of a dependent variable with respect to an independent variable.
- x Indeterminate Forms: Evaluate limits that result in indeterminate forms, including the application of L'Hopital's Rule.
- x Higher Order Derivatives: Determine the derivative and higher order derivatives of a function explicitly and implicitly and solve related rates problems.
- x Graph Sketching: Determine absolute extrema on a closed interval for continuous functions and use the first and second derivatives to analyze and sketch the graph of a function, including determining intervals on which the graph is increasing, decreasing, constant, concave up or concave down and finding any relative extrema or inflection points. Appropriately use these techniques to solve optimization problems.

## RESOURCES

Free math tutoring on a walk-in basis is available in the Math Learning and Resources Center located in Rm B0200 in the lower level of Carlisle Library (phone ext 2176). The Center operates on a walk-in basis. MLRC hours can be found at <http://www.math.utoledo.edu/mlrc/MLRC.pdf>

## GRADING AND EVALUATION

Syllabus should describe the methods of evaluation whether quizzes, exams or graded assignments. There should be at least two one-hour in class exams. If quiz scores are not used as a portion of the grade there should be three one-hour exams. A description of a grading method that includes the proportion that each evaluating method counts toward the grade should be described. If the grading method uses a grading scale it should be clearly stated.

A sample reasonable grade distribution for this class would be:

Homework and Quizzes:	30%
Midterm Exams:	40%
Final Exam:	30%

In scheduling quizzes and exams, it should be kept in mind that the last day to add/drop the class is the end of the second week of ( i)-6(t)-4(e s)-5(ee)4(:)]TJ 25.19 0 Tte.t4ould be:04 Tc d

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