



AMBROSE
UNIVERSITY COLLEGE

FACULTY OF
ARTS & SCIENCE

COURSE INFORMATION SHEET

MATHEMATICS 149- Introductory Calculus

Lecture: Tuesdays and Thursdays 9:45AM – 11:00 AM A2133
Tutorial: Monday 11:15AM – 12:05 PM

Calendar Description: (3-2) A

This course teaches functions and graphing, integrals and derivatives, as well as exponential, trigonometric, and logarithmic functions.

Prerequisite: Math 30

Note: Students may not receive credit for both MA 149 and the former MA 151

Instructor: John Wiest
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Text: *Single Variable Calculus*
Jon Rogawski
W.H. Freeman & Co.

The course consists of 3 hours of lecture and 1 hour of lab/tutorial per week. All quizzes will be written during lab/tutorial hours. The best 4 marks on quizzes will be taken in for grades. Attendance at lectures and tutorials will help ensure success on quizzes and exams. If any quiz/exam is missed due to illness or death in the family, a doctor or counselor's note is required before a rewrite will be allowed.

Marking:	Quizzes (best 4 out of 5)	24%
	Midterm	36%
	Final (cumulative)	40%

Grading Scheme

A	90-100%	C	63-66%
A-	85-89%	C-	60-62%
B+	80-84%	D+	54-59%
B	76-79%	D	50-53%
B-	70-75%	F	Below 50%
C+	67-69%		

The following is a tentative schedule for the topics that will be covered in the course.

<u>Week of</u>	<u>Topic</u>
Sept. 08	Remembering Algebra, Real Numbers and Functions
Sept. 14	Real Numbers, Functions and Graphs; Linear and Quadratic Functions; The Basic Classes of Functions
Sept. 21	Trigonometric Functions
Sept. 28*	Inverse Functions; Exponential and Logarithmic Functions; Limits
Oct. 05	Limits; Basic Limit Laws; Continuity; Evaluating Limits; Trigonometric Limits
Oct. 12* (No Tutorial)	Intermediate Value Theorem; Definition of the Derivative; Differentiation Rules; Rates of Change; Higher Derivatives
Oct. 19	Derivatives of Trigonometric Functions; The Chain Rule; Implicit differentiation; Derivative of the Inverse
Oct. 26*	Derivatives of Exponential and Logarithmic Functions Related Rates
Nov. 02!!!!!!!!!!!!!!	Linear Approximation; Extreme Values; Mean Value Theorem
Nov. 09	Graph Sketching; Optimization;
Nov. 16*	L'Hopital's Rule; Antiderivatives; Approximating Area;
Nov. 23	The Definite Integral; The Fundamental Theorem of Calculus
Nov. 30*	The Method of Substitution; Area between two curves
Dec. 07	Finishing up and Review-ish stuff

Weeks with a (*) are those in which a quiz will be administered. The Midterm will be on November 03 during regular lecture time.

Problems to Try from the Textbook

For the sake of your sanity, don't try ALL of the problems. Just try enough to make you feel comfortable with the process involved. DO make sure you try some of the later problems in each section (i.e. don't restrict yourself to the simpler ones at the beginning of each section).

<u>Section</u>	<u>Problems</u>
1.1	All Preliminary Questions, 2 – 18, 19, 21, 23, 25, 26, 27, 28, 30, 36 – 39, 40 – 47, 59, 60, 61 – 66, 68, 70, 71, 72, 75
1.2	1 – 20, 21, 25, 26, 30, 31, 33, 34 – 41, 44, 45, 50, 51, 53, 54, 56
1.3	1 – 8, 27, 28, 29, 32, 33, 34, 36
1.4	All Preliminary Questions, 1, 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18 – 26, 28, 30, 31 – 34, 41 – 50, 52, 54, 55
1.5	1 – 6, 8 – 15, 17, 19, 23 – 28, 29 – 38, 39 – 42,
1.6	All Preliminary Questions, 1, 2 – 10, 11 – 22, 23, 25 – 30
2.1	1 – 16, 19, 22, 23, 25, 26, 33, 34
2.2	All Preliminary Questions, 1, 3, 5, 7, 8, 9, 10, 11 – 16, 21, 22, 23, 24, 25, 26, 27, 28, 37, 38, 39, 44, 45, 46, 47 – 49
2.3	31 – 22, 25 – 28, 29, 30, 31
2.4	1, 2 – 4, 6, 7 – 16, 17, 18, 19, 20, 51, 52, 53 – 56, 57, 58, 59 – 68, 79 – 82, 83, 84, 85, 86
2.5	1 – 32, 43 – 52
2.6	1 – 8, 9 – 16, 19 – 32,
2.7	1 – 16, 17, 21, 22, 23, 24
3.1	1, 2, 3 – 6, 7, 8, 11 – 14, 21, 23, 25, 27, 29, 32, 34, 35, 37, 43, 53 – 58, 64, 69,
3.2	1 – 8, 9 – 16, 17 – 20, 21, 23 – 32, 47, 48, 49, 51, 53, 55, 56, 57,
3.3	1 – 6, 7 – 12, 13 – 16, 17 – 27, 42, 45, 46, 47, 48, 49 – 52

- 3.4 1, 2, 3, 5 – 8, 9 – 10, 13, 16, 20, 21, 23, 28, 29, 30, 31, 32, 33, 38, 43, 45, 47, 49
- 3.5 1 – 28, 33, 34, 35, 36, 39, 40, 43
- 3.6 1 – 26, 31 – 38, 42, 43, 44, 51
- 3.7 All Preliminary Questions, 1 – 4, 5, 6, 7, 15 – 72, 78, 79 – 82, 90, 92, 93
- 3.8 1, 2, 3 – 26, 29, 30, 31, 35, 36, 39
- 3.9 1, 2, 3 – 8, 10, 11 – 16
- 3.10 1 – 48
- 3.11 1 – 38 (For your sanity's sake, don't try all of them. PLEASE)
- 4.1 1 – 6, 8 – 15, 34, 35, 36, 37, 53 – 61, 64
- 4.2 All Preliminary Questions, 1, 2, 3 – 14, 15, 16, 17, 23 – 56, 59 – 62, 78, 79, 80, 81, 82
- 4.3 1 – 10, 12, 13, 14, 15 – 18, 25 – 52, 54, 57, 61
- 4.4 1, 2, 7 – 18, 23 – 36
- 4.5 1, 2, 3 – 6, 13 – 36, 51 – 70, 75, 76 – 91
- 4.6 1- 53 (Again, DON'T try them all, and don't get discouraged if you get stumped on some of them)
- 4.7 1 – 48
- 4.9 1 – 42, 43, 44, 47 – 62, 63 – 68, 71, 73,
- 5.1 13 – 24
- 5.2 11, 12, 13, 14, 15, 16
- 5.3 5 – 40, 41 – 46
- 5.4 All Preliminary Questions 1, 2, 3, 4, 5, 6, 7 – 14, 15 – 18, 24, 25
- 5.5 1, 3, 5, 7, 17, 18, 19,

5.6	All Preliminary Questions, 1 – 28, 33 – 70, 74
5.7	1 – 10, 13 – 70
6.1	1 – 18, 27 - 45