

BARUCH COLLEGE (CUNY) - DEPARTMENT OF MATHEMATICS
MATH 2003 SYLLABUS

Textbook: Gordon, Wang and Materowski, *Applied Calculus for Business, Economics and Finance*, Second Edition, Pearson, 2015. Ordering Information will be found on Blackboard.

- Graphing calculator required: Texas Instruments TI-89 or TI-92 Plus.
- Tutoring is available at SACC, Room 2-116, Vertical Campus, (646) 312-4830
- Videos, Final Exam Review Manual and Text Errata Sheet available at the Blackboard MTH 2003 ALL Blackboard Site.
- Additional Calculator Exercises are posted on the Master Blackboard ALL site in the Course Document tab.
- Answers to the textbook exercises may be found at www.baruch.cuny.edu/math/Applied_Calculus/

Chapter 0 contains material that the student is expected to know prior to this course; topics in these five sections may be reviewed at the discretion of the instructor. Note the calculator tips in these sections should be looked at carefully.

Exercises in **red** may be done with a calculator, all others without.

Section	Topic	MyMathLab Assignment	Text (As recommended by Instructor)	Practice Final Exams
1.1	The Line	1.1	9, 12, 14, 17, 18, 19, 20, 29, 38, 41, 43, 47, 49, 55, 61, 63, 69, 71, 73, 76, 81, 82, 83	A4, B15, B21, C3, C25, D18, D19, D26, E4, E16
1.2	Applications of Linear Functions	1.2	4, 5, 7, 10, 12, 13, 16, 19, 21, 23	A6, B31, C34, D28, E5
1.3	Regression	1.3	5, 9, 11, 12	A19, A34, B29, C20, D34, E30
1.4	Basic Notions of Functions	1.4	1 –19 (odd), 22, 26, 30, 43, 45, 55, 57, 67, 68, 72, 74, 83, 85, 88, 90, 92, 93	A5, A8, A27, B8, B9, B22, C1, C35, D2, E2, E3
1.5	Quadratic Functions - Parabolas	1.5	1 –15 (odd), 22, 25, 27, 30, 34, 40, 41	A9, A21, B7, D22, E13
1.6	More on Functions	1.6	2, 4, 5, 7, 10, 13, 15, 18, 21, 22, 24 , 28, 31, 42	A3, A20, A25, A26, B6, B14, B23, B33, C2, C4, C8, C9, C11, D1, D23, D25, D30, D33, D35, E7, E11, E23, E27, E35
1.7	The Circle	1.7	1 –21 (odd), 22, 29 , 32, 34	A7, B20, D12, E18
1.8	Economic Functions	1.8	1, 3, 7, 8, 10, 13 , 21, 23 , 28, 30, 33	A24, A32, B12, B18, B34, C13, C24, D11, D21, E15, E21, E22
Chapter One Review			10, 11, 12, 21, 24, 25, 34	
2.1	Slope of a Curve (and Derivatives)	2.1 (Note that the 4-step process is the definition of the derivative)	7, 9, 11, 14, 15, 20, 26, 28, 29, 31, 32, 33, 34, 36, 37 ,	A22, B27, C26, E28

Section	Topic	MyMathLab Assignment	Text	Practice Final Exams
2.2	Derivative Rules 1	2.2	3, 4, 6, 11, 13, 15, 17, 20, 21, 26, 28, 30, 34	A11, A15, A23, A31, B13, B32, C16, C27, C28, D7, D13, E1, E9, E14
2.3	Limits and Continuity	2.3	1 – 23 (odd), 24, 30, 31, 33, 34, 44, 47, 51, 58, 76, 77	A1, A2, B2, B4, B30, C6, C7, C30, D5, D17, D20, D27, E6, E8, E12, E24
2.4	Limits at Infinity, Infinite Limits and Asymptotes	2.4	1 – 25, 31, 33, 35, 38, 39, 41, 45	A33, B5, B11, C5, C12, D6, E17, E26, E29
2.5	Derivative Rules 2	2.5	1, 3, 4, 6, 7, 9, 12, 15, 16, 23, 27, 28	B16, B24, C10, D3, D8, E25
2.6	The Chain Rule	2.6	3, 7, 9, 13, 14, 16, 17, 20, 21, 26, 28, 30	A10, A12, A18, B10, B35, C15, C29, D10, E10
2.7	Marginal Functions and Rates of Change	2.7 (Note that the 4-step process is the definition of the derivative)	1, 3, 5, 14, 16, 19, 20, 29	A35, B17, B26, C21, C23, C32, D16, D24, D29, E33, E34
2.8	Implicit Differentiation	2.8	3, 8, 10, 12, 15, 19, 20, 21, 22	A14, B1, C22, D4
2.10	Related Rates	2.10	3, 5, 8, 10, 13, 14, 20, 23	A13, A30, B3, C14, C31, D9
Chapter Two Review			1 – 21	
A1	Basic Operations (Matrices)	A.1	1, 3, 5, 7, 12	A16, D15
A2	Matrix Multiplication	A.2	3, 5, 11, 19, 20, 22, 24, 25, 28, 29	A28, B19, B28, C18, C19, D14, D31, D32, E19, E20, E32
A3	Gauss-Jordan Reduction	A.3	1, 3, 5, 7, 9, 11, 15, 20, 23, 25, 35, 39	E31
A4	Inconsistent Linear Systems and Systems with Infinitely Many Solutions	A.4	2, 4, 6, 8, 10, 12, 14, 18	A17, A29, B25, C17, C33
Chapter Review A 1-4			2, 3, 5, 6, 10	

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LEARNING GOALS OF COURSE: Upon completion of this course, students will be able to:

- Represent functions algebraically and graphically.
- Compute limits of functions, and use limits to determine the derivative of a function.
- Use appropriate theorems to determine derivatives of algebraic functions.
- Interpret the derivative as a rate of change, and apply this interpretation to other disciplines.
- Perform algebraic manipulations with matrices. Apply matrix operations to analyze systems of linear equations and determine solutions when they exist.
- Use a graphing calculator to perform various calculations occurring in precalculus and calculus.