

College of Staten Island, City University of New York (CUNY)

Math 232 (Section 6955): Fall 2012 Syllabus

Analytic Geometry and Calculus II

Instructor: **Joseph Maher**

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Course location: M 10:20-12:05 1S-217

W 10:20-12:05 1S-217

Textbook: Rogawski, *Calculus, Early Transcendentals*, ET edition, W.H. Freeman
ISBN: 14292-95031

Grading policy: 10% Homework and attendance

50% Midterms

40% Final

Additional info:

Disability policy: Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Office for Disability Services. Prior to granting disability accommodations in this course, the instructor must receive written verification of student's eligibility from the Office of Disability Services, which is located in 1P-101. It is the student's responsibility to initiate contact with the Office for Disability Services staff and to follow the established procedures for having the accommodation notice sent to the instructor.

Integrity policy: CUNY's Academic Integrity Policy is available online at
<http://www.cuny.edu/about/info/policies/academic-integrity.pdf>

THE COLLEGE OF STATEN ISLAND, CUNY
DEPARTMENT OF MATHEMATICS

**MATH 232 – CALCULUS II
COURSE OUTLINE**

Text: Rogawski, Calculus – Early Transcendentals,
W. H. Freeman & Co. (2008)
ISBN-13: 978-1-4292-1073-7
ISBN-10: 1-4292-1073-7

Note: Below, each lesson corresponds to a one-hour class. Homework problems in **bold** correspond to similar WeBWork problems, which must be submitted online.

Note: Students are also required to complete five MATLAB projects listed below.

Projects: The MATLAB projects that are part of this course are not distributed, as they can be read online. If a hard copy is desired, the materials can be downloaded as a pdf file or purchased in bound format for a small fee from: www.lulu.com/csimath

Lesson	Section	Topic	Homework Problems
1	5.3 5.4	Review: Fundamental Theorem of Calculus	5.3/ 9, 17, 23, 27, 37, 43, 45, 51, 57 5.4/ 15, 29, 33, 37, 39, 43
2	5.6	Review: Integration by substitution	33, 35, 37, 43, 51, 67
3	5.7	Review: Integration of transcendental functions	3, 13, 17 MATLAB 1: Intro to Symbolic Math
4	6.1	Area between two curves	1, 3, 5, 7, 9, 11, 15, 17
5	6.1 cont'd	Area between two curves	
6	6.2	Volume, Average value	1, 3, 5, 9, 11, 13, 14, 15, 16
7	6.2 cont'd	Volume, Average value	
8	6.3	Volume of revolution	1, 3, 5, 7, 9, 11, 19 MATLAB 2: Applications of Integration
9	6.4	Cylindrical shells	1, 3, 5, 7, 11, 13, 17, 19, 23, 25
10	7.1	Numerical integration	1, 3, 5, 7, 9, 13, 23
11	7.1 cont'd	Numerical integration	
12	7.2	Integration by parts	1, 3, 5, 7, 11, 21, 31, 41
13	7.2 cont'd	Integration by parts	
14		Review	
15		Review	
16		Exam 1	
17	7.3	Trigonometric integrals	1, 3, 5, 9, 11, 19, 23, 25
18	7.4	Trigonometric substitution	1, 3, 5, 7, 13, 15, 19, 21, 23
19	7.6	Partial fractions	1, 9, 12, 14, 17, 21, 31, 32, 52
20	7.6 cont'd	Partial fractions	MATLAB 3: Integration
21	7.7	Improper integrals	15, 21, 23, 43, 48, 53, 65, 67
22	7.7 cont'd	Improper integrals	

23	8.3	Center of mass	11, 13, 17, 21, 25, 28, 32
24	8.4	Taylor polynomials	1, 3, 7, 9, 11, 13, 15, 32, 43
25	8.4 cont'd	Taylor polynomials	MATLAB 4: Taylor Polynomials
26	10.1	Sequences	15, 21, 23, 27, 31, 36, 38, 39, 43, 45
27	10.2	Series	9, 11, 21, 23, 27, 29, 32, 33, 46
28	10.2 cont'd	Series	
29	10.3	Convergence of positive series	3, 5, 7, 9, 13, 21, 23, 25, 34, 37, 47, 51, 55, 65, 71
30	10.3 cont'd	Convergence of positive series	
31	10.4	Absolute and conditional convergence	3, 6, 11, 13, 15, 17, 19
32	10.5	Ratio and root tests	5, 7, 11, 13, 15, 24, 35, 41, 45, 47, 49, 51
33	10.5 cont'd	Ratio and root tests	
34	10.6	Power series	1, 8, 13, 19, 23, 27, 31, 32
35	10.6 cont'd	Power series	
36	10.7	Taylor series	3, 9, 19, 21, 23, 29, 37, 59
37	10.7 cont'd	Taylor series	
38		Review	
39		Review	
40		Exam 2	
41	8.1	Arc length and surface area	7, 9, 11, 13, 15, 20, 35, 37, 39, 41
42	8.1 cont'd	Arc length and surface area	
43	11.1	Parametric equations	11, 13, 15, 17, 19, 21, 27, 31, 41, 45
44	11.2	Arc length and speed	5, 7, 17, 31, 33
45	11.3	Polar coordinates	3, 5, 13, 21, 25, 29, 31, 45 MATLAB 5: Polar Graphs
46	11.4	Area and arc length in polar coordinates	7, 9, 13, 15, 25
47	12.1	Vectors in the plane	17, 21, 23, 31, 41, 43, 47, 49, 53, 55
48	12.2	Vectors in three dimensions	11, 25, 27, 45, 51, 53
49	12.3	Dot product	25, 31, 43, 49, 57, 59, 61, 63, 73
50	12.3 cont'd	Dot product	
51	12.4	Cross product	15, 19, 23, 27, 43, 47, 59, 63
52	12.4 cont'd	Cross product	
53	12.5	Planes in three dimensions	3, 13, 15, 21, 31, 33, 45, 57, 59
54	12.5 cont'd	Planes in three dimensions	
55		Review	
56		Review	

ROLE IN CURRICULUM

MTH 232 is the second course of a three-semester sequence in calculus.

LEARNING GOALS AND ASSESSMENT PLAN

Learning Goal	Assessment
Find areas between curves and volumes of solids of revolution using definite integrals.	NA
Determine whether a given infinite series converges or diverges.	NA
Solve applied problems using calculus of vector-valued functions.	NA
	NA

When assessment activities are done, the results will be summarized in memorandum form and filed with the department chairperson for record keeping purposes.

Information obtained from assessment will be used to assess and self-reflect on the success of the course and to make any necessary changes to improve teaching and learning effectiveness.

Undergraduate Catalog Course Description

College of Staten Island

Course prefix:	MTH
Course number:	232
Course title:	Analytic Geometry and Calculus II
Subject	Mathematics
Minimum credits:	3.0
Maximum credits:	3.0
Hours per week:	4.0
Course description:	The second of a three-semester sequence in calculus. Topics include areas between curves, volumes of solids of revolution, techniques of integration, sequences and series, improper integrals, polar coordinates, and parametric representative of curves.
Prerequisite:	MTH 230 or MTH 231 MTH 229.
Comments:	MTH 229.