

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

## Math 232 (Section 26929 ): Spring 2018 Syllabus

### Analytic Geometry and Calculus II

Instructor: **Joseph Maher**

Office: 1S-222

Phone: (718) 982-3623

Email: joseph.maher@csi.cuny.edu

Office hours: M 2:30-4:25, W 2:30-3:20

Course location: M 10:10 - 12:05 1S-115  
W 10:10 - 12:05 1S-115

Textbook: Rogawski and Adams, *Calculus, Early Transcendentals*, Third edition, W.H. Freeman  
ISBN: 978-1-4641-1488-5

Grading policy:  $\max(0.1\text{HW} + 0.5\text{MT} + 0.4\text{FE}, \text{FE})$

HW Homework and attendance

MT Midterms

FE 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  
<https://www.csi.cuny.edu/catalog/undergraduate/academic-policies.htm#o3518>

THE COLLEGE OF STATEN ISLAND, CUNY  
DEPARTMENT OF MATHEMATICS

**MATH 232 – CALCULUS II**  
**COURSE OUTLINE**

Text: Rogawski and Adams, Calculus – Early Transcendentals, Third Edition  
W. H. Freeman & Co. (2015). ISBN# 978-1-4641-1488-5

Note: Below, each lesson corresponds to a one-hour class. Homework problems in **bold** correspond to similar WeBWorK problems, which must be submitted online. Students are also required to complete five MATLAB projects listed below, which can be obtained in PDF at [www.lulu.com](http://www.lulu.com) with search term “csi math”.

Lesson	Section	Topic	Homework Problems
1	5.2 5.3	Review: Definite integral Review: Indefinite integral	5.2/ <b>8, 13</b> , 18, 23, 27, 37, <b>44, 56</b> , 83 5.3/ <b>17, 22, 24, 26</b> , 38, 43, 45
2	5.4 5.5	Review: Fundamental Theorem of Calculus	5.4/ <b>14, 19, 29</b> , 34, <b>35, 40</b> , 41
3	5.7	Review: Integration by substitution	<b>35, 38, 43, 56, 60, 69, 85, 86</b> , 91, <b>95</b>
4	5.7 5.8	Review: Integration by substitution Integrating transcendental functions	MATLAB 1: Intro to Symbolic Math 5.8/ <b>3, 9</b> , 13, 17, <b>43, 50</b> , 57
5	6.1	Area between two curves	1, <b>3, 4, 7, 8, 9, 11, 17, 20, 29, 36</b>
6	6.1	Area between two curves	
7	6.2	Volume, Average value	<b>1, 5, 8, 9, 11, 13</b> , 14, 37, 39, <b>45, 58</b>
8	6.2	Volume, Average value	
9	6.3	Volume of revolution	1, <b>3, 5, 7, 9, 11, 23</b>
10	6.3	Volume of revolution	MATLAB 2: Applications of Integration
11	6.4	Cylindrical shells	1, <b>5, 11, 15, 17, 20</b> , 24, <b>26</b>
12	6.4	Cylindrical shells	
13	7.1	Integration by parts	<b>3, 4, 5, 7, 11, 13, 16</b> , 18, 25, <b>47, 50</b>
14	7.1	Integration by parts	
15	7.2	Trigonometric integrals	1, <b>3, 5, 9, 11, 20, 28</b>
16	7.3	Trigonometric substitution	1, <b>3, 5, 13, 15, 17, 19, 24</b>
17	7.3	Trigonometric substitution	
18	7.5	Partial fractions	1, <b>9, 12, 14, 17, 31, 40</b> , 52
19	7.5	Partial fractions	MATLAB 3: Integration
20	7.6	Strategies for integration	<b>22, 31, 38, 42, 45, 57</b>
21		Review	
22		<b>Exam 1</b>	
23		<b>Exam 1</b>	
24	7.7	Improper integrals	<b>12, 15, 21, 27, 48</b> , 53, 54, 65, 66, <b>76</b>
25	7.7	Improper integrals	
26	8.4	Taylor polynomials	<b>1, 3, 7, 9, 14, 15, 25</b>
27	8.4	Taylor polynomials	MATLAB 4: Taylor Polynomials
28	10.1	Sequences	<b>15, 21, 23, 28, 47</b> , 57, <b>58</b> , 61, 62, 63
29	10.1	Sequences	

30	10.2	Series	9, 11, 24, 25, 26, 28, 30, 44, 48, 49
31	10.2	Series	
32	10.3	Convergence of positive series	3, 5, 7, 10, 12, 20, 21, 25, 51, 57, 47
33	10.3	Convergence of positive series	
34	10.4	Absolute and conditional convergence	3, 6, 13, 10, 15, 19, 24
35	10.4	Absolute and conditional convergence	
36	10.5	Ratio and root tests	5, 7, 11, 15, 23, 37, 39, 41, 47, 49, 51
37	10.5	Ratio and root tests	
38	10.6	Power series	1, 7, 13, 24, 11, 20, 23, 27, 31
39	10.6	Power series	
40	10.7	Taylor series	4, 5, 9, 12, 32, 37
41	10.7	Taylor series	
42		Review	
43		<b>Exam 2</b>	
44		<b>Exam 2</b>	
45	8.1	Arc length and surface area	7, 9, 11, 13, 17, 20, 36, 39
46	8.1	Arc length and surface area	
47	11.1	Parametric equations	11, 13, 15, 17, 19, 21, 27, 31, 41, 45
48	11.1	Parametric equations	
49	11.2	Arc length and speed	5, 7, 17, 18, 31, 33
50	11.2	Arc length and speed	
51	11.3	Polar coordinates	3, 5, 15, 19, 25, 29, 31, 43
52	11.3	Polar coordinates	MATLAB 5: Polar Graphs
53	11.4	Area in polar coordinates	7, 9, 10, 13, 14, 16
54	11.4	Area in polar coordinates	
55		Final review	
56		Final 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.