

The City College of New York
Math 201, Calculus I
Syllabus and Course Information Fall 2017

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Text and Supplements

Essential Calculus, 2nd edition by James Stewart, 2012,
Cengage, with WebAssign online homework system.

If you wish to ALSO have a paper (loose-leaf) edition of the text, there is a “Digital First” bundle in the bookstore. This includes WebAssign access and the digital

version of

the text. If you prefer to ONLY have the digital version of the text, he/she will purchase

this when signing up for your class with WebAssign.

Video Lessons

A complete set of video lessons is available for this course: <http://math.sci.ccny.cuny.edu/pages?name=Math+201+Video+Lessons>

Course Learning Outcomes

After taking this course the student should be able to:

1. Evaluate limits
2. Differentiate algebraic and trigonometric functions
3. Solve maximum and minimum problems
4. Solve related rates problems
5. Apply methods of calculus to curve sketching
6. Antidifferentiate polynomial and trigonometric functions
7. Approximate integrals by Riemann sums
8. Evaluate elementary integrals using substitutions

Math 201 Calculus I, Spring 2016 Syllabus *Essential Calculus, 2nd edition* by James Stewart

Lesson:	Text Sec.	Suggested textbook problems:
1. Functions	1.1	5, 7, 19, 21, 22, 23, 25, 26, 29, 35, 37, 39, 40, 41, 59, 60, 61, 63
2. Important Functions to Know	1.2	7, 11, 18, 21, 23, 27, 29, 31, 37, 38, 39, 43
3. An Introduction to Limits	1.3	4, 5, 7
4. Calculating limits 5. The Squeeze Theorem	1.4	1, 5, 15, 17, 20, 21, 25, 26, 31, 33, 37, 38, 40, 41, 43, 44, 49, 50, 51, 55
6. Continuity	1.5	3, 4, 7, 27, 28, 33, 34, 39, 43
7. Limits involving infinity	1.6	5, 10, 19, 21, 25, 29, 33, 35, 39
8. The Derivative at a Point	2.1	2, 4, 5, 7, 8, 11, 13, 23, 25, 27, 29,
9. The Derivative Function	2.2	19, 20, 22, 23, 25, 33, 36
10. Basic Differentiation Formulas	2.3	1, 3, 4, 5, 7, 9, 10, 16, 19, 20, 29, 32, 36, 38, 40, 43, 44, 50, 53
11. The Product and Quotient Rules	2.4	1, 3, 4, 7, 13, 16, 17, 19, 21, 22, 24, 26, 31, 32, 33, 34, 41, 48
12. The Chain Rule	2.5	1, 7, 12, 13, 14, 17, 21, 25, 29, 32, 35, 36, 38, 41, 42, 43, 54
13. Implicit Differentiation	2.6	1, 3, 4, 5, 9, 10, 12, 13, 19, 21, 22
14. Related Rates	2.7	3, 4, 11, 12, 15, 17, 20, 21, 24, 29
15. Linear Approximation and Differentials	2.8	1, 4, 5, 6, 13, 17, 19, 21, 24
16. Maximum and Minimum Values (Absolute Extrema)	3.1	1, 5, 22, 24, 29, 31, 33, 37, 40, 41, 42, 43
17. The Mean Value Theorem	3.2	9, 13, 23, 24, 25
18. Relative Extrema 19. Concavity	3.3	1, 2, 3, 5, 10, 23, 24, 29, 33, 35
20. Curve Sketching	3.4	9, 10, 12, 13, 15, 19, 21, 24, 31
21. Optimization	3.5	7, 8, 10, 11, 12, 14, 17, 25, 27, 36, 39
22. Antiderivatives	3.7	1, 2, 7, 12, 15, 17, 20, 25, 27, 29, 32, 34, 40, 43, 50, 51, 53
23. Sigma notation	App. B	1, 4, 15, 18, 21, 25, 26, 29, 30, 31, 32, 35
24. Area Under a Curve	4.1	4, 5, 9, 16, 17, 18
25. The Definite Integral	4.2	2, 4, 11, 20, 21, 24, 25, 29, 30, 33, 36, 39, 40, 41
26. The First Fundamental Theorem 27. Indefinite integrals	4.3	3, 5, 7, 11, 12, 14, 15, 17, 18, 19, 21, 25, 29, 43, 44, 46, 58, 59, 61

28. The Second Fundamental Theorem	4.4	5, 7, 10, 11, 13, 14, 15, 19
29. Integration by Substitution	4.5	2, 3, 4, 6, 7, 10, 11, 14, 21, 22, 23, 26, 27, 33, 35, 34, 38, 39, 45, 47