Math 31- Calculus and Analytic Geometry I
Bronx Community College, CUNY
Section E01, Fall 2019
M-W 6:00pm - 8:45 pm, North Hall 136

INSTRUCTOR: Mehdi Lejmi   OFFICE: CP 319

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COURSE DESCRIPTION:

This is an introductory undergraduate calculus course. It is a one semester course designed to introduce limits, tangents, continuity, derivatives, rates of change, applications of derivatives, anti-derivatives, area, basic integration techniques and the fundamental theorem of calculus. The topics we will cover are Chapters 1-4 of the text, skipping a few sections along the way. Additional topics will be covered if time permits.

PREREQUISITES: Students enrolled in this course must have either taken MATH 30 or an equivalent.

TEXT: *Calculus*, by James Stewart, Cengage learning, 8$^{\text{th}}$ Edition. ISBN 978-0-53849781-7.

Students who do not need MTH33 may use *Single Variable Calculus*, by James Stewart, Cengage Learning, 8$^{\text{th}}$ Edition. ISBN 978- 1305266636

CALCULATORS:

Calculators are NOT permitted for tests, exams and quizzes. However, the use of a basic scientific calculator is required to aid in the homework sets. TI-89 and other symbolic manipulators are not allowed.

WEBSITE: http://bbhosted.cuny.edu

GRADING: Homework will be assigned and to be turned in approximately weekly.

Please regularly check CUNY Blackboard for announcements regarding Exams/Homework/Quizzes. Homework will be given at the instructor's discretion. Your lowest Homework/quizz will be dropped. Homework assignments will assist in understanding the material but will NOT be sufficient to learn this material well. You should be doing many more problems.

There will be two in-class term tests. *No make-up tests will be given.* If you miss a test, you must contact me within 24 hours should you wish to have your absence excused. A doctor's note is needed to justify illness. Any student with a *justified* absence during a test will have his or her *(uncurved)* final exam grade count in place of the missed test. You are responsible for the material in the course readings in addition to any material and announcements made during lecture, regardless of whether or not you were in attendance.

Homeworks	25%
Test 1	20%
Test 2	20%
Final Exam	35%

SECTION	TOPIC	SUGGESTED EXERCISES
1.4	The Tangent and Velocity Problems	49 /1,3, 5, 7
1.5	The Limit of a Function	59/ 1-5, 12-14, 17, 23-28
1.6	Calculating Limits Using Limit Laws	69/ 1, 3-23 odd
	Review	95/1-11 odd, 17, 23, 27, 29
2.1	Derivaties	110/ 1, 3, 7, 19-29 odd, 35-43 odd, 47, 51, 53
2.2	The Derivative as a Function	122/1, 3, 4, 7, 19, 20, 21, 25-45 odd
2.3	Differential Formulas	136/1-43 odd, 51, 53, 67, 75
2.4	Derivatives of Trigonometric Functions	146/1-17 odd, 25, 29, 39-47 odd
2.5	The Chain Rule	154/1-45 odd, 47, 51, 55, 69, 71
2.6	Implicit Differentiation	161/1-19 odd, 25, 27, 35, 43, 45
2.7	Rates of Change Applications	173/ 1-9 odd, 15, 18
2.8	Related Rates	180/ 1, 3, 7, 8, 9, 11-31 odd
2.9	Linear Approximations and Differentials	187/1, 3, 5, 7-25 odd, 31
	Review	191/ 3, 5, 11, 13-37, 45, 51, 59, 61, 75, 77, 79, 82
3.1	Maximum and Minimum Values	204/ 3, 5, 15-27 odd, 29-55 odd
3.2	The Mean Value Theorem	212/ 1, 3,7, 9, 11, 15, 19
3.3	Derivatives and Graph Shapes	220/ 1, 5, 7, 8, 9-17 odd, 29-37 odd
3.4	Limits at Infinity; Horizontal Asymptotes	234/ 3, 9-27 odd, 35, 39
3.5	Summary of Curve Sketching	242/ 1-35 odd
3.7	Optimization Problems	256/ 3, 5, 7, 11, 17, 19, 25, 29
3.8	Newton's Method	267/ 5, 7, 13-19 odd, 29
3.9	Antiderivatives	273/ 1-39 odd, 41, 43, 45
	Review	276/ 1-27 odd, 38, 41, 46, 49, 30-57 odd
4.1	Areas and Distances	293/ 1, 3, 5, 13, 15, 19, 23
4.2	The Definite Integral	306/ 3, 5, 9, 17, 21-25 odd, 31, 33, 37
4.3	The Fundamental Theorem of Calculus	318/ 3, 7-35 odd, 41, 45, 49
4.4	Indefinite Integrals	326/ 1-11 odd, 19-41 odd, 55, 57
4.5	The Substitution Rule	335/ 1-29 odd, 35-51 odd
	Review	338/2, 5, 9-27 odd, 33, 35, 37