



**CALCULUS & ANALYTIC GEOMETRY II
MA2320 • SYLLABUS FALL 2014**

Professor: **Frank Sanacory**

Office: **NAB 2014**

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Office Hours: **MTW 1:00PM-2:30PM**

Course Web Site: **sanacory.net**

TEXTBOOK: Calculus: Early Transcendentals, Single Variable, by Briggs and Cochran, ISBN: 9780321664143

PREREQUISITE: Grade of C or higher in MA 2310 Calculus & Analytic Geometry I.

COURSE DESCRIPTION: Topics include indefinite and definite integral, applications of definite integral, integration techniques, infinite series, and analytic geometry.

COURSE OBJECTIVES: To become proficient in integration and its applications, to learn about infinite sequences and series.

CALCULATOR: No calculator is allowed.

TUTORIAL: Drop-in tutorial is available in the Mathematics Learning Center in **H211a**.

ACCOMMODATIONS FOR STUDENTS WITH SPECIAL NEEDS: If you have, or suspect you may have a physical, psychological, medical or learning disability that may impact how you function academically and/or your access to activities on campus, please contact Dr. Lisa Whitten, Director of the Office of Services for Students with Disabilities (OSSD). She will determine whether or not you qualify for academic accommodations and arrange them with your professors if you do. The OSSD is located in the NAB, Room 2064. You can reach Dr. Whitten at 516-876-3009 or whittenl@oldwestbury.edu.

COURSE EVALUATION & GRADING: Your grade for the course will be based on your homework/quiz performance (15%), two tests (45%) and a comprehensive final exam (40%).

RESPECT: No cell phones in class and no texting. And no calculator will be needed for this course.

FINAL EXAM: Will be held Wednesday, December 17, in our regular classroom at the regular class time.

TOPICS TO BE COVERED

INTEGRATION

- 5.1 Approximating Areas under Curves
- 5.2 Definite Integrals
- 5.3 Fundamental Theorem of Calculus
- 5.4 Working with Integrals
- 5.5 Substitution Rule

APPLICATIONS OF INTEGRATION

- 6.1 Velocity and Net Change
- 6.2 Regions between Curves
- 6.3 Volume by Slicing
- 6.4 Volume by Shells
- 6.5 Length of Curves

INTEGRATION TECHNIQUES

- 7.1 Integration by Parts
- 7.2 Trigonometric Integrals
- 7.3 Trigonometric Substitution
- 7.4 Partial Fractions
- 7.5 Other Integration Strategies
- 7.7 Improper Integrals

SEQUENCES AND INFINITE SERIES

- 8.1 An Overview
- 8.2 Sequences
- 8.3 Infinite Series
- 8.4 The Divergence and Integral Tests
- 8.5 The Ratio and Comparison Tests
- 8.6 Alternating Series

POWER SERIES

- 9.1 Approximating Functions with Polynomials
- 9.2 Power Series
- 9.3 Taylor Series
- 9.4 Working with Taylor Series

PARAMETRIC AND POLAR CURVES

- 10.1 Parametric Equations
- 10.2 Polar Coordinates
- 10.3 Calculus in Polar Coordinates
- 10.4 Conic Sections