SUNY OLD WESTBURY

**Department of Mathematics, Computer & Information Science**

# CALCULUS & ANALYTIC GEOMETRY II
# MA 2320.002 • SYLLABUS SUMMER 2017
# 11:45 am - 2:20 pm MTWR

*Professor:* **Frank Sanacory**
*Office:* **NAB 2014** *Email:* SanacoryF@oldwestbury.edu
*Course Web Site:* ***sanacory.net*** *Office Hours:* **MTWR 2:20PM – 2:50PM**

**TEXTBOOK: Single Variable Calculus: Early Transcendentals**, 2nd Edition, by Briggs, Cochran, and Gillett, published by Pearson 2014, ISBN-13: 9780321965172.

**PREREQUISITES**: A grade of C or better on MA 2310 : .

**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.

**COURSE EVALUATION & GRADING:** Your grade for the course will be based on your homework/quiz performance (15%), two tests (50%) and a comprehensive final exam (35%).

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| A = [94, 100]<br>A- = [90, 93] | B+ = [87, 89]<br>B = [84, 86]<br>B- = [80, 83] | C+ = [77, 79]<br>C = [74, 76]<br>C- = [70, 73] | D+ = [67, 69]<br>D = [64, 66]<br>D- = [60, 63] | F = [0, 59] |

**CALCULATOR:** No calculator is allowed.

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

**ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES:**
If you have or suspect you may have a physical, psychological, medical or learning disability that may impact your course work, please contact Stacey DeFelice, Director, The Office of Services for Students with Disabilities (OSSD), NAB, 2065, Phone: 516-628-5666, Fax (516) 876-3005, TTD: (516) 876-3083. E-mail: defelices@oldwestbury.edu.
The office will help you determine if you qualify for accommodations and assist you with the process of accessing them. All support services are free and all contacts with the OSSD are strictly confidential. SUNY/Old Westbury is committed to assuring that all students have equal access to all learning activities and to social activities on campus.

**RESPECT:** No cell phones in class and no texting.

**FINAL EXAM:** Will be held August 17, 2017 in our regular classroom at the regular class time.

TOPICS 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
6.6 Surface area
INTEGRATION TECHNIQUES
7.1 Basic approaches
7.2 Integration by parts
7.3 Trigonometric integrals
7.4 Trigonometric substitutions
7.5 Partial fractions
7.8 Improper integrals
7.9* Introduction to differential equations
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, Root, and Comparison Tests
8.6 Alternating series
POWER SERIES
9.1 Approximating functions with polynomials
9.2 Properties of 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 section

* Covered depending on time.