



Department of Mathematics, Computer & Information Science

CALCULUS & ANALYTIC GEOMETRY II
MA 2320. 021• SYLLABUS SUMMER 2021
9:00a.m. to 11:25a.m MTWR
June 14, 2021 through July 15, 2021

Professor: **Frank Sanacory**

Email: SanacoryF@oldwestbury.edu

Course Web Site: sanacory.net

TEXTBOOK: **Single Variable Calculus: Early Transcendentals**, 3rd Edition, by Briggs, Cochran, et al, published by Pearson 2018. See registration instructions sheet.

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

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%).

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

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.

FINAL EXAM: Will be held July 15, 2021 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.