

# Calculus II

## MAT 256

**INSTRUCTOR:** Brian F. Kennedy

Office: C-156

Phone: 860-215-9441

E-mail: mathbk@yahoo.com

**REQUIRED TEXT:** *Calculus* 8th ed. Early Transcendentals by James Stewart

**CREDIT:** 4 credit hours

### COURSE DESCRIPTION

This is the second semester of Calculus, it continues and expands on the topics covered there. The topics include, but are not limited to: antiderivative, definite integrals, applications of integration, differentiation and integration of transcendental functions, methods of integration, parametric equations, polar coordinates, infinite sequences and series, convergence testing and some topics on vectors.

**PREREQUISITE:** MAT 254 Calculus I.

**GRADING POLICY:** A student will receive one of the following grades: A, A-, B+, B, B-, C+, C, C-, D+, D, D-, F, I, W, P or Audit. Determination of that grade will be based on the following. Throughout the semester there will be four, 100 point exams (an exam will be announced at least one week prior to its administration). Quizzes and projects throughout the semester totaling 100 points. Your final grade will be computed by totaling all the points earned on the four tests and all quizzes then dividing that total by the 500 possible points.

Grade Equivalents:	A 93 - 100	B 83 - 86	C 73 - 76	D 63 - 66
	A- 90 - 92	B- 80 - 82	C- 70 - 72	D- 60 - 62
	B+ 87 - 89	C+ 77 - 79	D+ 67 - 69	F 59 or less

Quizzes will be take home or during the first 15 minutes of class and cannot be made up. No test can be made up without prior arrangement with the instructor. All makeup tests will take place during final exam week.

### COLLEGE WITHDRAWAL POLICY

Course withdrawals are accepted up until the week before classes end. Specific dates are posted in the academic calendar and withdrawal forms are available online or at the Registrar's office. The withdrawal does not have to be signed by the instructor but it is strongly recommended that you speak with your instructor before withdrawing. If you are receiving financial aid you must contact their office for approval before withdrawing. If necessary, you can withdraw over the phone by calling the Registrar's Office at 860-215-9064.

### DISABILITIES STATEMENT

If you have a hidden or visible disability which may require classroom or test-taking modifications, please see me as soon as possible. If you have not already done so, please be sure to register with one of the college's disability service providers.

### ACADEMIC INTEGRITY POLICY

All students are expected to demonstrate their knowledge of the material on each quiz and test. Any student caught cheating will receive a zero on that test.

### CLASS CANCELTION POLICY

If class is canceled by the instructor a notice will be placed on the classroom door. If time permits, the class will be notified by email.

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## MAT256

### COURSE OUTLINE (subject to change)

Date	Chapters (Sections) covered	Course Outcomes
8/29	6.1 - 6.2	<ol style="list-style-type: none"> <li>1. Integrate the functions using substitution, integration by parts, the method of partial fractions, trigonometric substitutions, tables</li> <li>2. Perform approximate integration</li> <li>3. Show that the improper integral converges and find its value, or show that it diverges</li> <li>4. Find the area bounded by the curves.</li> <li>5. Find the volumes of revolution: disks, washers, and cylindrical shells.</li> <li>6. Find the arc length.</li> <li>7. Use integration on various applications to physics and engineering</li> </ol>
8/31	6.2 - 6.3	
9/7	6.4 - 6.5	
9/12	Review	
9/14	Test #1	
9/19	7.1 - 7.2	
9/21	7.3 - 7.4	
9/26	7.4 - 7.5	
9/28	7.5 - 7.6	
10/3	7.6 - 7.7	
10/5	7.7 - 7.8	
10/10	8.1, 8.3	
10/12	Review	
10/17	Test #2	
10/19	9.2, 9.3	
10/24	11.1 - 11.2	
10/26	11.2 - 11.3	
10/31	11.3 - 11.4	
11/2	11.4 - 11.5	
11/7	11.5 - 11.6	
11/9	11.8 - 11.9	
11/14	11.9 - 11.10	
11/16	11.10 - 11.11	
11/21	Review	
11/23	Test #3	
11/28	10.1 - 10.2	
11/30	10.3 - 10.4	
12/5	12.1 - 12.2	
12/7	12.3 - 12.4	
12/12	Review	
12/14	Final Exam	
		<ol style="list-style-type: none"> <li>8. Find general and particular solution of separable differential equations; first order linear differential equations</li> <li>9. Determine whether the sequence is convergent or divergent, and find the limit of the convergent sequences</li> <li>10. Determine whether the geometric series converges or diverges, and find the sum of each convergent series.</li> <li>11. Use divergence test, limit comparison test, ratio test, root test, Integral test, direct comparison test to determine whether the series is convergent or divergent.</li> <li>12. Represent functions as power series, Taylor and Maclaurin series</li> <li>13. Plot polar-form points.</li> <li>14. Convert from polar to rectangular coordinates and from rectangular coordinates to polar</li> <li>15. Find areas and lengths in polar coordinates</li> <li>16. Graph in polar coordinates.</li> <li>17. Find the derivative of equations of curves defined by parametric equations</li> <li>18. Find the arc length of a curve defined by parametric equations.</li> <li>19. Perform operations on vectors.</li> <li>20. Find the standard representative of a vector.</li> <li>21. Compute a resultant vector.</li> <li>22. Find the dot and the cross product of two vectors.</li> </ol>

All students are required to maintain an online learning portfolio in Digication that uses the college template.