

Johnson County Community College

Course Syllabus

Mathematics Division

Math 241: Calculus I

Section 001 (CRN 84689)

Fall 2009

INSTRUCTOR INFORMATION

Instructor:	Steven J. Wilson
Campus Phone:	913-469-8500, ext. 3784
Campus Office:	CLB 129
Office Hours:	Monday, 2:00-2:50 p.m. Tuesday & Friday, 11:00-11:50 a.m. Wednesday & Thursday, 9:00-9:50 a.m.
Campus Email:	swilson@jccc.edu
Web Page:	http://staff.jccc.edu/swilson/index.htm
Angel Page:	http://dl.jccc.edu
Division Office:	CLB 235 (my campus mailbox is here)
Division Fax:	913-469-2537 (delivery to my mailbox is not instantaneous)

COURSE INFORMATION

Credit Hours:	5
Prerequisite:	Grade of C or higher in Math 172 (Trigonometry) or Math 173 (Precalculus), or appropriate math assessment test score
Textbook:	<i>Thomas' Calculus: Early Transcendentals</i> , 11 th edition, originally by George B. Thomas, revised by Weir, Hass, and Giordano, Pearson Publishing, 2008.
Supplies:	A graphing calculator is required. The TI-83 or TI-84 are recommended. Computers with symbolic manipulation capabilities (e.g. TI-89) are not permitted.
Description:	This is the first of a three-semester sequence on calculus designed for engineering, physics and math majors. Rates of change, areas and volumes will be studied. To accomplish this, the students will study and apply limits and continuity. Differentiation and integration of algebraic, trigonometric and transcendental functions will also be a major focus of this course.
Objectives:	Upon successful completion of this course the student should be able to: <ol style="list-style-type: none">1. Evaluate the limits of functions.2. State whether a function is continuous or discontinuous based on both the graph and the definition of continuity.

	<ol style="list-style-type: none"> 3. Use limits to describe instantaneous rate of change, the slope of the tangent line and the velocity and acceleration of a moving particle. 4. Differentiate algebraic, trigonometric, and transcendental functions explicitly and, where appropriate, implicitly. 5. Use derivatives for curve sketching. 6. Use and interpret the derivatives of functions to solve problems from a variety of fields, including physics and geometry. 7. Integrate algebraic, trigonometric, and transcendental functions. 8. Compute definite integrals by the Fundamental Theorem of Calculus, by numerical techniques, and by substitution. 9. Use integration results to calculate areas, volumes, and mean values.
Outline & Competencies:	Available on the JCCC web site at: http://www.jccc.net/home/course_outline/current/MATH175 .

NOTICES

Prerequisite:	The majority of mathematics courses are sequential. Students must earn a grade of C or higher in a prerequisite mathematics course to progress to its subsequent mathematics course. In accordance with the assertion made on your billing statement, during the first two weeks of the semester, if a student is found not to have successfully filled the prerequisite(s) for this course, the student will be dropped from the course. He/She will be allowed to enroll in the appropriate lower level math course on a space available basis with an even exchange of tuition. After the first two weeks, students who have not met the prerequisite(s) will be dropped from the course with no refund of tuition.
Academic Dishonesty:	All JCCC math students are expected to comply with the Student Code of Conduct as written in the College Catalog. Students are encouraged to familiarize themselves with the topics listed in the code. Penalties could include an F in the class or an F on that particular assignment.
ADA Compliance:	JCCC provides a range of services to allow persons with disabilities to participate in educational programs and activities. If you desire support services, contact the Access Services office, (913) 469-8500, ext. 3521, or TDD (913) 469-3885. The Access Services office is located in the Success Center on the second floor of the Student Center.

COURSE REQUIREMENTS AND EVALUATION

Your **course grade** will be determined as follows:

TYPE OF WORK	Number	Points each	Total Points
Homework	15	15	225
Tests	4	100	400
Final Exam	1	100	100
TOTAL			725

Grading Scale	
A	653-725
B	580-652
C	508-579
D	435-507
F	0-434

Show your work (or give an explanation) on all homework, tests, and final exam. Incorrect answers cannot receive partial credit without your accompanying work. Some questions may request a specific process, and no partial credit will be awarded without that particular process. Procedures and concepts are as important as answers in math.

No makeups, for homework, tests, or final exam. However, tests may be taken early by prior arrangement, and homework may be turned into my office or mailbox anytime on the due date.

Low test scores will be replaced by the final exam score. Missed tests will also be replaced by the final exam score. For this reason, no test ever needs to be made up. (Homework scores are **not** replaced by the final exam score.)

If you are **late to class**, see me at the end of class to avoid being counted absent.

Extra credit is available, and a maximum of 35 points of extra credit can be applied toward your grade. Extra credit possibilities include:

- Visit the professor's office and share your goals (5 points maximum).
- One extra homework assignment (15 points maximum).
- Monthly participation in Integermania (5 points per month maximum). See <http://staff.jccc.edu/swilson/integermania/> .
- Participation in the AMATYC Math Contest (10 points maximum).

TENTATIVE COURSE SCHEDULE

Monday	Tuesday	Wednesday	Thursday	Friday
8/17 Calculus Intro	8/18 Function Review	8/19 Trigonometry Review	8/20 2.1 Limits	8/21 2.2 Limit Laws
8/24 2.3 Using δ , ϵ	8/25 HW 1 2.4 One-sided Limits	8/26 2.4 Limits at ∞	8/27 2.5 Infinite Limits	8/28 2.5 Asymptotes
8/31 2.6 Continuity	9/1 HW 2 2.6 Int Value Theorem	9/2 Review	9/3 EXAM 1	9/4 2.1, 2.7 Rates of change
9/7 HOLIDAY	9/8 HW 3 2.7, 3.1 Tangent Lines	9/9 3.1 Def. of Derivative	9/10 3.2 Derivative Formulas	9/11 3.2 Product & Quotient Rules
9/14 3.3 Rate of Change Apps	9/15 HW 4 3.4 Trig Derivatives	9/16 3.5 Chain Rule	9/17 3.5 Chain Rule	9/18 3.6 Implicit Differentiation
9/21 3.7 Logarithm Derivatives	9/22 HW 5 3.7 Log Differentiation	9/23 Review	9/24 EXAM 2	9/25 Inverse Trig Review
9/28 3.8 Inverse Trig Derivatives	9/29 HW 6 3.9 Related Rates	9/30 3.9 Related Rates	10/1 3.9 Related Rates	10/2 3.10 Linearization
10/5 3.10 Differentials	10/6 HW 7 4.1 Absolute Min and Max	10/7 4.2 Mean Value Theorem	10/8 4.3 First Derivative Test	10/9 4.4 Concavity
10/12 4.4 Second Derivative Test	10/13 HW 8 4.4 Curve Sketching	10/14 4.5 Optimization	10/15 NO CLASS	10/16 NO CLASS
10/19 4.5 Optimization	10/20 HW 9 4.5 Optimization	10/21 Review	10/22 EXAM 3	10/23 4.7 Newton's Method
10/26 4.8 Antiderivatives	10/27 HW 10 4.8 Initial Value Problems	10/28 5.5 Integration by Substitution	10/29 5.5 Integration by Substitution	10/30 5.1 Area Approximation
11/2 5.2 Sigma Notation	11/3 HW 11 5.2 Finite Sums	11/4 5.3 Riemann Sums	11/5 5.3 Definite Integrals	11/6 5.4 Fund Theorem

11/9 5.4 Fund Theorem	11/10 HW 12 5.1 Average Value	11/11 5.6 Area between curves	11/12 5.6 Area between curves	11/13 8.2 Integration by Parts
11/16 8.2 Integration by Parts	11/17 HW 13 More Integration	11/18 Review	11/19 EXAM 4	11/20 6.1 Volumes using disks
11/23 6.1 Volume using disks	11/24 HW 14 6.2 Volume using washers	11/25 HOLIDAY	11/26 HOLIDAY	11/27 HOLIDAY
11/30 6.2 Volume using shells	12/1 HW 15 6.3 Lengths of curves	12/2 6.5 Surface Area	12/3 6.5 Surface Area	12/4 Review
12/7 Review	12/8 HW 16 Review	12/9 Review	12/10 NO CLASS	12/11 FINAL EXAM
<p>If classes should be cancelled on the day of the final exam, you will need to make up the final exam. Check the course Angel site for possible options, then email your instructor.</p>				