

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER	MAC 2233
COURSE TITLE:	Calculus for Business and Social Sciences
PREREQUISITE(S):	MAC 1105 or MAC 1140 with a grade of "C" or better or a satisfactory score on placement test
COREQUISITE(S):	None
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	3
CONTACT HOUR BREAKDOWN:	
Lecture/Discussion:	3
Laboratory:	
Other _____:	
FACULTY WORKLOAD POINTS:	3
STANDARDIZED CLASS SIZE ALLOCATION:	25

CATALOG COURSE DESCRIPTION:

This course is designed for students who plan to major in business or the social sciences. It provides an introduction to differential and integral calculus with emphasis placed on applications from business, economics and the social sciences. This course cannot be used to satisfy degree requirements for students majoring in mathematics or engineering.

SUGGESTED TEXT(S):	Larson, <u>Brief Calculus with Applications</u> , Houghton-Mifflin, current ed., ISBN 0-395-91685-2
	Bittinger, <u>Calculus & Its Appl.</u> , Addison-Wesley, Current ed., ISBN 0-201-78908-6 package, 0-201-33864-5
	Barnett & Ziegler, <u>Calculus for Business, Economics, Life Sciences, & Social Sciences</u> , Prentice Hall, current ed., ISBN 0-13-092053-3

SUGGESTED TEXT(S) (CONTINUED)

Tan, Calculus for Managerial ETC, Thompson Learning, Current ed., ISBN 0-534-36586-8

Taylor, Applied Calculus, Thomson Learning, current ed., ISBN 0-534-33971-9.

Larson-Edwards, Brief Calculus: An Applied Approach, Houghton-Mifflin Co., current ed. ISBN 0-395-91685-2

Lial, Calculus with Applications (Brief Version), Addison-Wesley, current ed., ISBN 0-321-06712-6

Hoffman, Calculus for Business, Economics, and the social and life Sciences, McGraw Hill, 9th Edition, ISBN-13 9780073309279

Hughes-Hallett, Applied Calculus Wiley 3rd Edition, ISBN: 978-0-471-68121-2

IMPLEMENTATION DATE:

Winter Term, 1984 (852)

REVIEW OR MODIFICATION DATE:

Fall Term, 1999

Fall Term, 2002 (20031)

Spring Term, 2005 (20052)

Fall Term 2008 (20091) - Outline Review 2007

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Algebra Review	7
A. Graphs & Functions	
B. Linear Inequalities	
C. Applications	
II. Limits and the Derivative	10
A. Limits and Continuity	
B. Rates of Change	
C. Definition of the Derivative	
D. Derivative Formulas	
E. Differentiation: Algebraic Functions	
III. Applications of the Derivative	7
A. Relative Extrema	
B. Absolute Maxima and Minima	
C. Curve Sketching	
D. Implicit Differentiation (Optional)	
E. Higher-Order Derivatives	
F. Applications of Extrema	
IV. Introduction to Integration	7
A. Antiderivatives and Indefinite Integrals	
B. Area and the Definite Integral	
C. The Fundamental Theorem of Calculus	
D. Substitution	
E. Area Between Two Curves	
V. Exponential and Logarithmic Functions	7
A. Exponential Functions	
B. Logarithmic Functions	
C. Derivatives of Exponential Functions	
D. Derivatives of Logarithmic Function	
VI. Applications	7
A. Business	
B. Economics	
C. Social Sciences	
D. Education	
VII. Topics from Linear Algebra (Optional)	
A. Matrices and Determinants	
B. Applications: Linear Programming	

*TOPICS NEED NOT BE COVERED IN THE INDICATED SEQUENCE.



**Florida State College
At Jacksonville**

**General Education Requirements
Categories & Courses Review Checksheet**

Course Prefix and Number: MAC2233	Semester Credit Hours: 3
Course Title: Calculus for Business and Social Science	

Discipline Area for the Course:

<input type="checkbox"/> Communication	<input checked="" type="checkbox"/> Mathematics	<input type="checkbox"/> Social & Behavioral Sciences
<input type="checkbox"/> Humanities & Visual/Performing Arts	<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Other-Designated Option

INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input type="checkbox"/> Scientific Method of Inquiry
<input type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input type="checkbox"/> Working Collaboratively

KNOWLEDGE	Primary	Secondary	N/A	VALUE	Primary	Secondary	N/A
A. Global and Historical Knowledge & Understanding				Intellectual honesty	<input checked="" type="checkbox"/>		
• Comprehends a general knowledge of the nature, origins and contributions of major civilizations				Curiosity and openness to new ideas	<input checked="" type="checkbox"/>		
• Comprehends the workings and interrelations of personal, business and government economies		<input checked="" type="checkbox"/>		Recognition of one's own creative potential			
• Comprehends political, social and economic systems and their effects upon society				Acceptance of and respect for differences among people and cultures		<input checked="" type="checkbox"/>	
B. Cultural and Aesthetic Knowledge and Understanding				Civic Engagement			
• Comprehends the contributions of the arts and humanities to the human experience on a personal, national or global level				Lifelong Learning		<input checked="" type="checkbox"/>	
• Comprehends the historical development of the arts and sciences							
• Comprehends religious and cultural systems and their effects upon society							
C. Human Awareness and Understanding							
• Comprehends the dynamics of human behavior and the process of increasing self-awareness, growth and development							
• Comprehends the stages of human development and the dynamics of human relationships in diverse cultures							
• Comprehends the factors that promote physical, mental and social well-being							
D. Mathematics, Science and Technology							
• Comprehends the basic concepts and investigative processes of the natural sciences							
• Comprehends the breadth, significance and development of the mathematical sciences		<input checked="" type="checkbox"/>					
• Comprehends the ways science and technology have shaped and continue to reshape human cultures and the environment			<input checked="" type="checkbox"/>				

Name of Person Completing This Form: J. Batson

Signature: _____ Date: 02/06/2004



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	Learning Outcomes	Method Of Assessment
1	The students will be able to:	Students apply mathematical principles to applications in business and social sciences on tests and class assignments.
2	1. Understand the concept of limits and continuity.	Through tests and class assignments, students demonstrate ability to reason logically and analytically.
3	2. Compute limits using analytical, graphical, numerical and symbolic methods.	Through tests and class assignments, students demonstrate quantitative literacy using basic differential and integral calculus in solving mathematical problems.
4	3. Understand the concept and definition of the derivative and their application to mathematical, as well as real-world problems.	Students are successful in subsequent courses and standardized tests that utilize mathematical methods, models, and measures.
5	4. Understand the rules of differentiation and apply these rules to compute derivatives of algebraic, exponential, and logarithmic functions.	
6	5. Understand the concept of the integral and the Fundamental Theorem of Calculus and their application to mathematical, as well as real-world problems.	
7	6. Understand the rules of integration and apply these rules to evaluate integrals of algebraic functions.	
8		
9		
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Name of Person Completing This Form: Matthew Mitchell

Signature: _____ Date: 02/06/2004