

MIDSTATE COLLEGE
411 W. NORTHMOOR RD. PEORIA, IL 61614
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Course number & Name: MAT 160 Calculus for Business and Social Sciences
Credit hours: 4 quarter hours **Method of Delivery:** classroom

Text: Calculus For Business, Economics, Life Sciences, and Social Sciences, 10th ed., 2005
Author: Barnett, Ziegler, and Byleen
Publisher: Pearson

Course Description:

This course is presented as an applied approach to the calculus and is intended for students who have had at least three two years of high school algebra and trigonometry or who have taken college algebra course at an accredited university or college. This course does not count toward a major or minor in mathematics. Fundamental concepts covered will be limits, formulas for finding derivatives, higher derivatives, definite and indefinite integrals, the fundamental theorem of integral calculus and corresponding substitution techniques.

Requirements for Completing the Course: Achieve an overall average of 'C'.

Topics: to be covered: Linear Functions, Quadratic Functions, Polynomial and Rational functions, Exponential and logarithmic functions. Introduction to limits, continuity, the derivative, derivative rule, marginal analysis, first derivative and second derivative tests, graphing, optimization, The constant e and continuous compound interest, exponential and logarithmic derivatives, implicit differentiation, related rates, antiderivatives and indefinite integrals, integration by substitution, Growth and Decay, The Fundamental Theorem of Calculus, applications in business and economics,

Course Objectives: Upon completion of this course, the student will be able to:

1. explain the concepts of function, derivative and the definite integral, in writing and using graphical, numerical, and algebraic ideas.
2. determine the derivative of the elementary functions (polynomial, trigonometric, rational, exponential, logarithmic at a point using numerical, graphical, and algebraic techniques.
3. determine the definite integral of the elementary functions using numerical, graphical, and algebraic techniques.
4. interpret the derivative and definite integral in a variety of problem settings.
5. algebraically differentiate the elementary functions using the rules for differentiation including the chain rule with a high degree of accuracy.
6. find anti-derivatives for some elementary functions directly or using substitution.
7. Solve optimization problems given a reasonable real world setting and appropriate data.
8. relate a function to its derivative and anti-derivatives graphically, numerically, and algebraically.
9. apply calculus to solve problems in business economics, life sciences, and social sciences.

Midstate Grading scale:	90 - 100	A
	80 - 89	B
	70 - 79	C
	60 - 69	D
	0 - 59	F

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Midstate College Plagiarism Policy

Matters related to academic honesty or contrary action such as cheating, plagiarism, or giving unauthorized help on examinations or assignments may result in an instructor giving a student a failing grade for that academic effort and also recommending the student be given a failing grade for the course and/or be subject to dismissal. Plagiarism is using another person's words without giving credit to the author. Original speeches, publications, and artistic creations are sources for research. If you use the author's words in your papers or assignments, you must acknowledge the source. Plagiarism is strictly against the academic policy of the college and is grounds for failing the course. If repeated, plagiarism may result in suspension from the college.

Assessment Portfolio Reminder:

Each student is required to prepare an assessment portfolio for graduation. Keep a copy of this syllabus in the portfolio. Use the "Evidence for Success" list for your program, which is already in the portfolio, and instructions from the instructor to determine the assignment(s) that should be in the assessment portfolio.

Instructor Information: Alan M. Paredes Ph.D., Room 304, (309) 692-4092, aparedes@midstate.edu

Participation Requirements/Policies and Procedures:

- 1) Assignments/Exams: Homework is due at the beginning of the class period. All homework is to be turned in with your name, date, and the name of the assignment on a cover sheet attached to the homework. Individual exercises will be labeled within an assignment. 70% is the highest score that late or make up work can earn. No make up work is accepted during finals week.
- 2) Attendance: Regular attendance is expected. Attendance is necessary to achieve a grade of 'C' or better. It is the student's responsibility to notify the instructor when a class will be missed. If you know of a conflict ahead of time, you are welcome to submit projects early. If the instructor receives no call or email 12 hours before the missed class period you will be considered missing and no make-up is allowed for that day. DO NOT MISS EXAMS. Makeup exams will only be given in the case of EXTREME, well-documented situations.
- 3) Academic Dishonesty: Plagiarism and cheating are serious offenses and may be punished by failure on exam, paper or project; failure in course; and/or expulsion from the college. For more information refer to the "Academic Dishonesty" policy in the student handbook.
- 4) Grades: It is the students' responsibility to keep copies of all assignments turned in for a letter grade until the end of the quarter when a final grade has been earned. If a document is lost and no copy is available, the student will not receive credit.

Grading Specifications: Five tests worth 100 points each equaling 500 points total.

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Course Schedule:

Week One

Introduction/course administration

Sections: 1.1 Page 17, 1-11, odd, 19-44 odd, 55-73 odd
1.2 Page 33, 1-60 odd
1.3 Page 49, 5-25 odd, 33-49 odd

Week Two

Sections: 1.4 Page 64, 1-9 odd, 19-33 odd
Review for test one
Take test one (60 minute exam)

Week Three

Sections: 2.1 Page 90, 1-18 all, 25-30 odd, 39-44 odd, 47-52 odd
2.2 Page 106, 1-39 odd, 43-52 odd
2.3 Page 119, 1-41 odd, 53-59 odd, 67-77 odd

Week Four

Sections: 3.1 Page 144, 1-33 odd, 55-64 odd
3.2 Page 156, 1-23 odd
Review for test two

Week Five

Sections: Take test two (60 minute exam)
3.3 Page 172, 5-25 odd
3.4 Page 183, 1-17 odd, 25-48 odd, 69-76 odd

Week Six

Sections: 3.5 Page 192, 1-18 odd, 27-55 odd
3.6 Page 200, 1-50 odd
3.7 Page 1-15 odd

Week Seven

Sections: Review for test three
Take test three (60 minute test)
4.1 Page 19-38 odd
4.2 Page 255 7-19 odd, 29-41 odd

Week Eight

Sections: 4.3 Page 271 3-13 odd, 23-45 odd
4.4 Page 281 1-31 odd, 41-45 odd
4.5 Page 295 1-25 odd

Week Nine

Sections: Review for test four
Take test four
5.1 Page 311 1-30 odd
5.5 Page 355, 1-23 odd

Week Ten

Sections: 6.1 Page 379 1-31 odd, 39-63 odd
6.2 Page 393 1-39 odd

Week Eleven

Sections: 6.4 Page 415 17-39 odd
6.5 Page 429 5-39 odd

Week Twelve

Review for test five
Take test five