

Course Policies and Syllabus

Oklahoma State University
Department of Mathematics

Course ID and Section: MATH 2123-02
Course Title: Calculus for Technology I
Course Time and Room: MWF 12:30–1:20 p.m., HES 004
Semester: Spring 2011 (January 10–April 29)
Course Credit: Three semester hours
Final Exam: Monday, May 2, 10:00–11:50 a.m.

Contact Information

Instructor: Marc Mace
Email: mmace@math.okstate.edu
Office: MSCS 412
Office Telephone: 405-744-2291
Office Hours:
Monday 10:30 a.m.–12:00 p.m.
Tuesday —
Wednesday 10:30 a.m.–12:00 p.m.
Thursday —
Friday 10:30 a.m.–12:00 p.m.

Course Resources

Required Textbook: Allyn J. Washington *Technical Calculus with Analytic Geometry*, 4th Edition. Addison-Wesley, 2001.

Graphing Calculator: A scientific or graphing calculator is recommended for this course. I will be using a TI-83 Plus for this course. You may check out a graphing calculator free of charge from the Mathematics Department (401 MSCS) for use during the semester.

Help In the Course: It is important for you to seek immediate help when you feel that you need it. Do not assume that your problems or confusion will go away on its own. Often a delay causes more problems, more confusion, more frustration, and a much lower grade. I expect you to be confused and frustrated at times during the semester. This is normal. I also expect you to come in and ask questions. If you will come to my office and work with me, we can get you through the course successfully. Possible sources of help are the following:

- Come to my office or send me email. Ask for help. I can and will help you if you ask.
- Ask others in class. Work on problems with them. Many times this is the best way to learn.
- The Mathematics Learning Resource Center (MLRC) can be an invaluable resource to support your mathematical learning. It is located on the 4th floor of the Classroom Building.

If you need help, go somewhere to get it and get it quickly.

Course Information

Course Description: First semester of a terminal sequence in calculus for students in the School of Technology. Functions and graphs, differentiation and integration with applications. (OSU 2010-11 Undergraduate Catalog)

Prerequisite: Meet one of the following: MATH 1715 Precalculus, or MATH 1513 College Algebra and MATH 1613 Trigonometry.

Course Content, Objectives, and Goals: The objectives of the course are to understand the definitions and principles in elementary calculus (primarily differentiation and integration) and certain selected topics from advanced areas, to understand applications of calculus related to areas of technology, and to further develop necessary mathematical skills for continued study.

Competencies will be measured by in-class quizzes and in-class exams.

At the end of this course, the student will be able

- to understand the meaning of a function and distinguish common functions by their equations and graphs,
- to demonstrate an understanding of derivatives, how they relate to rates of change, and give the derivatives of several functions,
- to further develop necessary mathematical skills for continued study.

Grade Information

Grade Categories and Grading Scale: The grade categories and possible points that will be used to calculate your course average and the grading scale that will be used to calculate your course grade are listed below:

Grade Categories	Possible Points
Quizzes (10)	100
Tests (3)	300
Final Exam	200

Course Points	Course Grade
540–600	A
480–539	B
420–479	C
360–419	D
0–359	F

Quizzes: Quizzes will be announced in advance and will be given at the end of class. There will be 11 quizzes throughout the semester worth 10 points each, with the lowest score being dropped at the end of the semester when final grades are tabulated. Although there will be no assigned homework, I will suggest problems for you to consider and practice. The questions for the quizzes will be based off of those suggested homework problems, so it is to your benefit to practice them. There will be no make up quizzes for any reason.

Tests: There will be three tests during the semester with each test worth 100 points. The tests will be designed to measure your understanding of the concepts and ideas and your competency at the various skills and techniques. Tests will be cumulative in the sense that each test may have one or more questions dealing with material covered on previous tests. There will be **no make up tests**. If you miss a test, your final exam score will replace the missed test score if you request and obtain approval from the instructor in **advance** of the test and only for very **serious and unavoidable conflicts**. If this condition is not satisfied, it is understood that a grade of 0 will be recorded for the missed test. If a second test is missed, it will receive an automatic 0.

Final Exam: The final examination is scheduled for Monday, May 2, 10:00–11:50 a.m. The final examination will be comprehensive. University policy prohibits the giving of any final examination early. Make your end-of-semester plans accordingly.

Make-up Work: You are expected to take a quiz or exam when it is given. Again, no make-up quizzes will be given.

Withdrawal from the Course: Dropping means you are withdrawing from a specific course but are still enrolled in at least one other OSU course; the last day to drop a course with an automatic grade of "W" is Friday, April 8. "Withdrawal" means you are dropping all courses you are in and no longer enrolled for the current semester; the last day to withdraw from OSU classes with an assigned grade of "W" or "F" is Friday, April 22. Additional information about dropping and withdrawing is available on the Spring 2011 Syllabus Attachment. IT IS YOUR RESPONSIBILITY TO KNOW AND COMPLY WITH ALL DEADLINES.

Calculator: You will need your calculator during most classes and on all tests and exams. You will not be permitted to ask how to do calculator operations during an exam, nor can you borrow a calculator from the instructor or anyone else in the class for use during an exam.

Course Procedures

Accommodations for Disabilities: If you have a documented disability and wish to discuss academic accommodations, please feel free to contact me. The OSU Student Disability Services Office facilitates disability accommodations in cooperation with instructors. If you need such assistance, please let me know as soon as possible during the first week of class. A statement on this issue can be found in the Syllabus attachment mentioned above.

Academic Integrity and Syllabus Attachment: Please consult the OSU Spring 2011 Syllabus Attachment at <http://osu.okstate.edu/acadaffr/aa/PDFFiles/sylatspr.pdf>. The university has explicit rules governing academic integrity. Violations of academic integrity and other forms of cheating, as defined in the university Academic Integrity Policy, involve the intention to deceive or misrepresent. Students found guilty of an act of academic dishonesty may be subject to other disciplinary actions by the university. See the policy for specific details.

Daily Schedule and Important Dates

Important Dates:

January 17, Monday	Martin Luther King Holiday – no class
February 4, Friday	Test 1
March 9, Wednesday	Test 2
March 14–18, Monday–Friday	Spring Break — no class
April 15, Friday	Test 3
April 8, Friday	Last day to drop a class
April 22, Friday	Last day to withdraw from the university
May 2, Monday	Final Exam, 10:00–11:50 a.m.
May 11, Wednesday	Grades available online at 8:00 a.m.

Daily Schedule: The tentative daily schedule for the semester is given below:

Week 1	Jan 10 Jan 12 Jan 14	Syllabus; Intro to Functions(1.1) Intro to Functions; Algebraic Functions (1.1, 1.2) Rectangular Coordinates; Graph of a Function (1.3, 1.4)
Week 2	Jan 17 Jan 19 Jan 21	Martin Luther King Holiday – no class Basic Definitions; The Straight Line (2.1, 2.2) The Circle (2.3)
Week 3	Jan 24 Jan 26 Jan 28	The Parabola (2.4) The Ellipse (2.5) The Hyperbola (2.6)
Week 4	Jan 31 Feb 2 Feb 4	Translation of Axes; The Second Degree Equation (2.7, 2.8) Review Exam 1
Week 5	Feb 7 Feb 9 Feb 11	Limits (3.1) Slope of a Tangent to a Curve (3.2) The Derivative (3.3)
Week 6	Feb 14 Feb 16 Feb 18	Derivative as an Instantaneous Rate of Change (3.4) Derivatives of Polynomials (3.5) Derivatives of Products and Quotients of Functions (3.6)
Week 7	Feb 21 Feb 23 Feb 25	Derivative of a Power of a Function (3.7) Differentiation of Implicit Functions (3.8) Higher Derivatives (3.9)
Week 8	Feb 28 Mar 2 Mar 4	Tangents and Normals (4.1) Newton’s Method (4.2) Curvilinear Motion (4.3)
Week 9	Mar 7 Mar 9 Mar 11	Review Exam 2 Related Rates (4.4)
Week 10	Mar 14 Mar 16 Mar 18	Spring Break – no class Spring Break – no class Spring Break – no class
Week 11	Mar 21 Mar 23 Mar 25	Derivatives in Curve Sketching (4.5) More on Curve Sketching (4.6) Maximum and Minimum Problems (4.7)
Week 12	Mar 28 Mar 30 Apr 1	Differentials and Linear Approximations (4.8) Antiderivatives; The Indefinite Integral (5.1, 5.2) Area Under a Curve (5.3)
Week 13	Apr 4 Apr 6 Apr 8	Area Under a Curve (5.3) Definite Integral (5.4) Numerical Integration; The Trapezoidal Rule (5.5)
Week 14	Apr 11 Apr 13 Apr 15	Simpson’s Rule (5.6) Review Exam 3
Week 15	Apr 18 Apr 20 Apr 22	Applications of the Indefinite Integral (6.1) Areas by Integration (6.2) Volumes by Integration (6.3)
Week 16 – Pre-Finals Week	Apr 25 Apr 27 Apr 29	Centroids (6.4) Review Review