

MATH 1830 - Applied Calculus (formerly Intuitive Calculus)
3 Credit Hours

Course Description:

This course covers, limits, continuity, differentiation, integration and applications. The course is primarily intended for business majors. It is not substitute for MATH 1910.

Course Outcomes:

The primary educational goal of this course is to provide the student with an intuitive understanding of differential and integral calculus and its applications to business and economics. As a result of successfully completing this course, students will have demonstrated an acceptable level of mastery of the concepts and applications of an introductory course in calculus.

Prerequisites and Corequisites:

MATH 1130 with a grade of C or better. This prerequisite is necessary to ensure that the student has the algebra skills necessary for successful completion.

Course Topics:

Functions, Graphs, and Limits

- Limits

Differentiation

- The Derivative
- Techniques of Differentiation
- Rate of Change and Marginal Analysis
- The Chain Rule
- Higher Order Derivatives

Applications of Differentiation

- Increase and Decrease; Relative Extreme
- Concavity; Curve Sketching
- Absolute Maxima and Minima
- Practical Optimization Problems
- Applications to Business and Economics

Exponential and Logarithmic Functions

- Exponential Functions
- Exponential Models
- The Natural Logarithm
- Differentiation of Logarithmic and Exponential Functions
- Compound Interest

Integration

- Anti-derivatives
- Integration by Substitution
- The Definite Integral

Applications of Integration

- Area
- Applications to Business and Economics

Specific Course Requirements:

- Connection to the web through a dependable Internet Service Provider (ISP)
- Required Textbook (see below)
- Registration with MathZone (online homework)
- Scientific or approved Graphing Calculator (see below)
- Some proficiency in using the email, discussion board, and drop box components of D2L
- A valid Picture ID (e.g., driver's license)

Required Textbooks:

Please visit the [Virtual Bookstore](#) to obtain textbook information for this course. Move your cursor over the "Books" link in the navigation bar and select "Textbooks & Course Materials." Select your Program, Term, Department, and Course; then select "Submit."

Hardware and Software Requirements:

Minimum hardware requirements can be found [here](#).

Minimum software requirements can be found [here](#).

Common applications you might need:

To read a PDF file download the latest version of [Adobe Reader here](#)

Don't have Microsoft Word? Explore an alternative [OpenOffice here](#)

Accessing a PowerPoint file? Download the [PowerPoint Viewer here](#)

Web Resources:

Purdue [OWL Online Writing Lab](#) (for APA, MLA, or Chicago style)

The Writing Center [Online Writer's Handbook](#)

Student Resources:

- Technical support information can be found on the [TN eCampus Help Desk](#) page.
- Smarthinking virtual tutoring is available **FREE** of charge. to access Smarthinking, visit

the course homepage and select Smarthinking under Course Resources. You also view [sample sessions](#) to see what Smarthinking offers and how it works.

- Information on other student issues or concerns can be located on the [TN eCampus Student Resources](#) page.

Instructor Information:

Please see "Instructor Information" in the Getting Started Module for instructor contact information, virtual office hours, and other communication information. You can expect to receive a response from the instructor within 24-48 hours unless notified of extenuating circumstances.

Assignments and Projects:

Homework: Homework assignments in MyMathLab consist of algorithmically generated problems, tied to the course textbook. Homework must be submitted by 11:59 pm (Central time) on the due date listed in the D2L Course Calendar (NOT the due date in MyMathLab, which is actually the last date available). An individual student who occasionally may need additional time to complete an assignment may obtain an automatic 1-day extension by emailing the Instructor. You may submit each assignment multiple times. Your last submission will be automatically graded and recorded. Homework grades will be transferred from MyMathLab to D2L Grades at the end of the semester.

Warning: Doing the assigned homework is absolutely essential for students to learn the skills necessary to successfully complete the course. Any student who has not completed the relevant homework before a scheduled Test may be denied access, will be graded more harshly, and is not eligible for any extra credit and/or grading curve that might otherwise be available.

Class Participation:

Discussions: Online discussions among students are to be posted at the appropriate time in the appropriate folder of the course message board. Students are required to regularly read and post course-related messages. D2L allows the instructor to track discussion messages posted, as well as messages read. Both quantity (articles "read" and "posted") and quality of participation in these threaded discussions will count in the student's Discussions grade, which counts 5% of the overall grade.

Smarthinking.com: All students enrolled in the course have free access to this online tutoring service. Regular and significant utilization of this service is expected (and strongly recommended) of students who need tutorial assistance, and may be considered in the case of a borderline grade.

Late Policy:

Homework assignments (online in MyMathLab) are to be completed before the deadlines posted in the course Calendar. Quizzes and Tests must be completed on the scheduled dates. Any student who is unable to meet a stated deadline should contact the instructor before the deadline to request an extension. Points may be deducted, particularly on Tests that are done after the posted deadline.

Course Ground Rules:

The following two statements (1., 2.) were derived from the TBR System-wide Student Rules document, released January 2012:

RULES OF THE TENNESSEE BOARD OF REGENTS STATE UNIVERSITY AND
COMMUNITY COLLEGE SYSTEM OF TENNESSEE SYSTEMWIDE STUDENT RULES
CHAPTER 0240-02-03 STUDENT CONDUCT AND DISCIPLINARY SANCTIONS

[Read the document in its entirety here.](#)

1. Standards of Conduct:

- Students are required to adhere to the same professional, legal and ethical standards of conduct online as on campus. In addition, students should conform to generally accepted standards of "netiquette" while sending e-mail, posting comments to the discussion board, and while participating in other means of communicating online. Specifically, students should refrain from inappropriate and/or offensive language, comments and actions.

2. [Review the TN eCampus Academic Integrity/Academic Honesty Policy:](#)

- In their academic activities, students are expected to maintain high standards of honesty and integrity. Academic dishonesty is prohibited.

Such conduct includes, but is not limited to:

- an attempt by one or more students to use unauthorized information in the taking of an exam
- to submit as one's own work, themes, reports, drawings, laboratory notes, computer programs, or other products prepared by another person,
- or to knowingly assist another student in obtaining or using unauthorized materials.

Plagiarism, cheating, and other forms of academic dishonesty are prohibited.

Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are subject to disciplinary action through the regular procedures of the student's home institution. Refer to the student handbook provided by your home institution to review the student conduct policy.

In addition to other possible disciplinary sanctions that may be imposed, the instructor has the authority to assign an "F" or zero for an activity or to assign an "F" for the course.

Other Course Rules:

Students are expected to:

- Participate in all aspects of the course
- Communicate with other students
- Learn how to navigate in Brightspace
- Keep abreast of course announcements
- Use the assigned course management (Brightspace) email address rather than a personal email address

- Address technical problems immediately:
 - [Contact Technical Support](#)
 - [View Term Calendar here](#)
- Observe course netiquette at all times.

Guidelines for Communications:

Email:

- Always include a subject line.
- Remember without facial expressions some comments may be taken the wrong way. Be careful in wording your emails. Use of emoticons might be helpful in some cases.
- Use standard fonts.
- Do not send large attachments without permission.
- Special formatting such as centering, audio messages, tables, html, etc. should be avoided unless necessary to complete an assignment or other communication.
- Respect the privacy of other class members

Discussions:

- Review the discussion threads thoroughly before entering the discussion. Be a lurker then a discussant.
- Try to maintain threads by using the "Reply" button rather starting a new topic.
- Do not make insulting or inflammatory statements to other members of the discussion group. Be respectful of other's ideas.
- Be patient and read the comments of other group members thoroughly before entering your remarks.
- Be cooperative with group leaders in completing assigned tasks.
- Be positive and constructive in group discussions.
- Respond in a thoughtful and timely manner.

Library:

The [Tennessee Virtual Library](#) is available to all students enrolled in TN eCampus programs and courses. Links to library materials (such as electronic journals, databases, interlibrary loans, digital reserves, dictionaries, encyclopedias, maps, and librarian support) and Internet resources needed by learners to complete online assignments and as background reading will be included within the course modules. To access the Virtual Library, go to the course homepage and select the **Virtual Library** link under Course Resources.

Students with Disabilities:

Qualified students with disabilities will be provided reasonable and necessary academic accommodations if determined eligible by the appropriate disability services staff at their home institution. Prior to granting disability accommodations in this course, the instructor must receive written verification of a student's eligibility for specific accommodations from the disability services staff at the home institution. It is the student's responsibility to initiate contact with their home institution's disability services staff and to follow the established procedures for having the accommodation notice sent to the instructor.

Syllabus Changes:

The instructor reserves the right to make changes as necessary to this syllabus. If changes are necessitated during the term of the course, the instructor will immediately notify students of such changes both by individual email communication and posting both notification and nature of change(s) on the course bulletin board.

Disclaimer

The information contained in this syllabus is for general information purposes only. While we endeavor to keep this information up-to-date and accurate, there may be some discrepancies between this syllabus and the one found in your online course. The syllabus of record is the one found in your online course. Please make sure you read the syllabus in your course at the beginning of the semester. Questions regarding course content should be directed to your instructor.