



## **MAT 140**

### **Analytic Geometry and Calculus I**

4 credit hours

4 contact hours (4 lecture hours)

**Catalog Description** *This course includes derivatives and integrals of polynomials, rational, logarithmic, exponential, trigonometric and inverse trigonometric functions; curve sketching; maxima and minima of functions; related rates; work; and analytic geometry. Students may not receive credit for both MAT 140 and MAT 130.*

**Prerequisite** MAT 111 or MAT 112 (C or higher) or appropriate placement

#### **Textbook and Required Materials**

**Calculus** (Early Transcendental Functions) by Larson, Hostetler and Edwards (4th Ed., Houghton Mifflin, 2007)

TI-83 (or TI-82 or TI-85 or TI-86) Graphics Calculator (Texas Instruments)

The TI-89 and TI-92 calculators are not allowed in this course.

#### **Core Curriculum Competencies**

All courses approved for the general education core curriculum develop a student's critical thinking and/or communication skills.

This course develops critical thinking skills through instruction that emphasizes the understanding of mathematical concepts and the ability to apply these concepts to solving a problem. This will be demonstrated by assessments at the end of each unit and on the common final exam. The student will demonstrate the following critical thinking objectives:

- Find limits, derivatives (rates of change), and integrals for elementary and transcendental functions including polynomial, rational, radical, logarithmic, exponential, trigonometric, and inverse trigonometric functions using mathematical principles in a logical process.
- Solve real world problems involving rates of change (related rates), optimizations, and areas by applying mathematical principles in a logical process.

This course develops communication skills through instruction that emphasizes the presentation of mathematical ideas in appropriate, clear, and precise mathematical language. The student will demonstrate the following communication objectives:

- Graph elementary and transcendental functions, interpret the graph, and explain their properties using clear, appropriate, and precise mathematical symbols and terminology.
- Explain solutions to problems involving limits, derivatives, curve sketching, and integrals using clear, appropriate, and precise mathematical symbols and terminology.

**Grading System and Policy** The College-wide grading scale is

91-100 = A, 81-90 = B, 71-80 = C, 65-70 = D, below 65 = F

There will be a comprehensive departmental final exam, which everyone must take (no exemptions), and which counts 25% of the final grade. The remaining 75% will be specified by your instructor's syllabus addendum. Part or all of your evaluation in this course may be without a calculator.

**Attendance/ Withdrawal** Before attending classes, you must meet all prerequisites and officially register for all courses. Prompt and regular attendance is your responsibility. You are responsible for all material covered and all assignments made in class. Any time you are absent from a class, laboratory or other scheduled events, it is your responsibility to make satisfactory arrangements for any make-up work permitted by the instructor.

An absence is defined as nonattendance for any reason, including illness, emergency or official leave. If you arrive late to class, you may not be allowed into the classroom and may be considered absent for that period. If you leave before the instructor dismisses class, you may also be considered absent. All class sessions are important. Any time you miss a class you increase your risk of making a failing grade.

If you quit coming or participating in the course and do not officially withdraw by the withdrawal date for each semester, you will receive a grade of *F*. Your instructor cannot assign a grade of *W*. If you receive financial aid or veterans' aid, your aid may be revised as a result of any changes in your course schedule.

**Instructor availability** Your instructor is available to you outside of class for academic assistance. Full-time faculty members maintain and post regularly scheduled office hours. Part-time faculty members are accessible in a variety of ways, which may include conferences before and after class or by appointment, telephone conferences, and E-mail. The phone number for reaching your instructor is provided on your syllabus addendum.

**See your syllabus addendum** This is a departmental syllabus for all sections of the course. As such, it tries to address issues common to all sections. There will be issues (grading details, office hours, and the like) that are specific to your section, and these details will be covered in an addendum issued by your instructor.

#### **Activated Electronic Communication Devices**

These devices, such as cell phones and pagers are NOT permitted in TTC classrooms. On-call emergency personnel are required to report to their instructors and cannot communicate by electronic means during a testing situation.

#### **For Students Enrolled in Online or Other Distance-Learning Sections**

To confirm that you are actively involved in this course you need to contact the instructor at least once per week. Forms of contact can include (but are not limited to) posting/receiving emails, participating in online class discussions or chat rooms, and completing and submitting course assignments. Please see the instructor's addendum for any additional instructions.

**ADA Statement** The College will make reasonable accommodations for persons with documented disabilities. Students with disabilities should notify Services for Students with Disabilities (located in the Student Success Center) and their instructors of any special needs. Instructors should be notified on the first day of classes.

#### **Textbook Portions Covered**

Unit 1	Limits and Their Properties	Ch. 2
Unit 2	Differentiation	Ch. 3.1-3.7
Unit 3	Applications of Differentiation	Ch. 4.1, 4.3-4.8
Unit 4	Integration	Ch. 5.1-5.8

**Supplementary Help** Extra help is available in The Learning Center (920 bldg, rm 211). We have also placed in The Learning Center a copy of the publisher's complete solutions guide, which students can use on the premises.

**College Information** TTC uses Campus Cruiser e-mail as the standard communication system to send information to students and uses TTC Express to post final course grades. To access your accounts go to [www.tridenttech.edu](http://www.tridenttech.edu).

**Department Head** Elizabeth White at 574-6538  
**Division Admin. Asst.** 574-6015 (emergencies only)

rev. 11-09