



Hebei University of Technology

MAT 110 Calculus I

Course Outline

Course Information:

Term: Winter 2021

Course Time: Monday to Friday, 8 a.m. to 10 a.m.

Contact Hours: 55 hours

Credits: 3 credits

Prerequisite: MAT 101 Introduction to Calculus

Course Instructor Information:

Instructor: TBA

Email Address: TBA

Office Hours: By Appointment

Teaching Assistants: TBA

Course Description:

The course aims to introduce the differential and integral calculus, emphasizing on techniques and applications as well as major theorems. of calculus. Topics covered include Continuity, Derivatives and Rates of Change, Definite and Indefinite Integrals and the Net Change Theorem, Applications of Integration including Area between Curves and Volumes and so on.

Course Learning Objectives:

By the end of the course, students should be able to:

- solve problems involving the maximization or minimization of a quantity
- compute and interpret average rate of change and instantaneous rate of change for functions
- interpret the derivative of a function graphically, numerically and analytically

Course Materials:

James Stewart, *Single Variable Calculus: Early Transcendentals*, 8th Edition

Evaluation:

Attendance	10%
2 Assignments	10% (5% for each)
2 Quizzes	20% (10% for each)
Midterm Test	25%



Description of the Evaluation Tasks:

Students are supposed to attend each class. Prior to each class, students should finish the required reading and the homework exercise. During the class time, students are encouraged to actively participate in class activities and propose questions. Homework exercises and quizzes will be posted on the course website.

All work must be completed independently and carefully edited. A hard copy of the composition (in A4 format paper) should be submitted to the instructor at least 5 minutes before the class on the due date. Students' names are supposed to be written on the cover of any work. Work without a name will automatically receive a mark of 0.

All exams and tests will be held in class (or at a location to be announced). Accessing to the Internet, using e-mail or any other text messaging devices, such as cell phones or PDAs, are not allowed. Quizzes and tests must also be taken at the scheduled time. There will be no make-up exams.

Tutorials are mandatory. Students will read and discuss academic articles provided. Students will also discuss the case studies for the week's lectures. Each Tutorial will be 1 hour.

Grading Policy:

Students' grades are accumulated based on the daily performance (participation in lectures) and the cumulative evaluations (quizzes, a composition, and tests).

Students' letter grades will be assigned according to the following grading scheme:

A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	Below 50

Course Syllabus:



Week	Lecture	Topics	Dues	%
1	1	Course Introduction		
	2	Functions and Models		
	3	Functions and Models (Cont.)		
	4	Tutorial 1		
2	5	The Limit of a Function;		
	6	Continuity		
	7	Derivatives and Rates of Change		
	8	Tutorial 2	Quiz 1	5
3	9	Derivatives and Rates of Change (Cont.)		
	10	Problem Session		
	11	Differentiation Rules		
	12	Tutorial 3	Assignment 1 due	10
4	13	Differentiation Rules (Cont.)		
	14	Applications of Differentiation		
	15	Applications of Differentiation (Cont.)		
	16	Tutorial 4		
5	17	The Definite Integral		
	18	Review for Midterm		
	19		Midterm Test	25
	20	Tutorial 5		
6	21	Indefinite Integrals and the Net Change Theorem		
	22	Indefinite Integrals and the Net Change Theorem (Cont.)		
	23	Applications of Integration (Areas Between Curves; Volumes)		
	24	Tutorial 6	Quiz 2	5
7	25	Applications of Integration (Areas Between Curves; Volumes) (Cont.)		
	26	Techniques of Integration		
	27	Problem Session		
	28	Tutorial 7	Assignment 2 due	10



8	29	Further Applications of Integration		
	30	Modeling with Differential Equations		
	31	Separable Equations		
	32	Tutorial 8		
9	33	Polar Coordinates		
	34	Calculus with Parametric Curves		
	35	Polar Coordinates		
	36	Tutorial 9		
10	37	Areas and Lengths in Polar Coordinates		
	38	Infinite Sequences and Series		
	39	Final Exam Reviews; Problem Session		
	40		Final Exam	35

Academic Integrity:

Students must strictly adhere to the university's academic integrity rule; and all essays, exams and any other form of academic assignments must adhere to these rules. Any form of plagiarism, cheating, or misappropriation of materials will be considered a violation of academic integrity and will be punishable by the university.

Withdrawal from the Courses:

Students will be able to apply for a transfer or withdrawal within 3 days of the starting date of the course. If a withdrawal is applied for within 3 working days, the tuition fee will be fully refunded. After 3 days, the tuition fee will not be refunded. If a withdrawal is applied for in the first two weeks, it will be recorded as W (Withdraw) on the course transcript. After this initial two-week period, the class will be recorded as F (Fail).

Disabled facilities:

The University guarantees that all students with a disability will be able to make use of any school equipment. Teaching resources and teaching content are the same for all students, and students with a disability will receive the same teaching experience and opportunities. If you feel that you need special arrangements to be made due to a disability, please contact the University International Summer School directly.