



MATH 1220: Calculus II

2023 Summer Session	
Total Class Sessions: 25 Class Sessions Per Week: 5 Total Weeks: 5 Class Session Length (Minutes): 145 Credit Hours: 4	Instructor: Staff Classroom: TBA Office Hours: TBA Language: English

Course Description:

Calculus I and II together construct a general introduction to calculus. This course covers the following topics: logarithmic, exponential, and trigonometric functions; growth and decay, inverse trigonometric functions, related rates; basic techniques of integration related to area and volume, polar coordinates; parametric equations; sequences and series; Taylor's series with the remainder; the mean value and inverse function theorem, elementary transcendental functions, and methods of integration.

Prerequisite: MATH 1210 or equivalent 1st year calculus course.

Course Materials:

Essential Calculus: Early Transcendentals, James Stewart, 2nd edition

Course Format and Requirements:

Attendance:

Students are expected to attend and participate in class. Strong attendance and participation are good indicators of success. Each student is responsible for all course material, announcements, quizzes and exams made in class, whether or not the student attended that day's class.

Course Assignments:

Quizzes:

There will be 6 quizzes administered through the whole semester and the LOWEST score will be dropped. Quizzes will always be completed in the first ten minutes of class. The quiz problems will be similar to homework problems and in-class examples. There will be no make-up quizzes.

Exams:

Midterm Exams

There will be three midterm exams in this course. The midterm exams will be based on concepts covered in class. They will be in-class, close-book and non-cumulative.

Final Exam

The final will be cumulative and close-book. Note that the final will not be taken during the



normal class times. Exact time and location for final will be announced later.
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Course Assessment:

Quizzes (5 out of 6)	15%
Midterm Exams 1	20%
Midterm Exams 2	20%
Midterm Exams 3	20%
Final Exam	25%
Total	100%

Grading Scale (percentage):

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
98-100	93-97	90-92	88-89	83-87	80-82	78-79	73-77	70-72	68-69	63-67	60-62	<60

Academic Integrity:

Students are encouraged to study together, and to discuss lecture topics with one another, but all other work should be completed independently.

Students are expected to adhere to the standards of academic honesty and integrity that are described in the Chengdu University of Technology's *Academic Conduct Code*. Any work suspected of violating the standards of the *Academic Conduct Code* will be reported to the Dean's Office. Penalties for violating the *Academic Conduct Code* may include dismissal from the program. All students have an individual responsibility to know and understand the provisions of the *Academic Conduct Code*.

Special Needs or Assistance:

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.

Course Schedule:

Class 1:

Review of Fundamental Theorem

Volumes Using Cross-Sections

Class 2:

Volumes Using Cylindrical

Shells



Class 3:

Arc Length

Areas of Surfaces of Revolution

Class 4:

Quiz 1

Areas of Surfaces of Revolution (Cont.)

Hyperbolic Functions

Class 5:

Hyperbolic Functions (Cont.)

Integration by Parts

Class 6:

Trigonometric Integrals

REVIEW FOR MIDTERM EXAM 1

Class 7:

MIDTERM EXAM 1

Class 8:

Trigonometric Substitution

Integration of Rational Functions by Partial Fractions

Numerical Integration

Class 9:

Quiz 2

Integration of Rational Functions by Partial Fractions (Cont.)

Numerical Integration (Cont.)

Class 10:

Improper Integrals

Sequences

Class 11:

Quiz 3

Sequences (Cont.)

Infinite Series



Class 12:
The Integral Test
REVIEW FOR MIDTERM EXAM 2

Class 13:
MIDTERM EXAM 2

Class 14:
Comparison Tests
The Ratio Test

Class 15:
The Ratio and Root Tests
Alternating Series,

Class 16:
Quiz 4
Alternating Series (Cont.)
Absolute and Conditional Convergence

Class 17:
Absolute and Conditional Convergence (Cont.)
Power Series

Class 18:
Power Series (Cont.)
Taylor and Maclaurin Series
REVIEW FOR MIDTERM EXAM 3

Class 19:
MIDTERM EXAM 3

Class 20:
Taylor and Maclaurin Series (Cont.)
Convergence of Taylor Series

Class 21:
Quiz 5
Convergence of Taylor Series (Cont.)
The Binomial Series and Applications of Taylor Series



Class 22:

Parametrizations of Plane Curves

Calculus with Parametric Curves

Class 23:

Quiz 6

Calculus with Parametric Curves (Cont.)

Polar Coordinates

Class 24:

Graphing in Polar Coordinates

Areas and Lengths in Polar Coordinates

Class 25:

Wrap-up

Review for Final

Final Exam (Cumulative): TBA