SCUPI – Math0230 Calculus 2
Spring Semester 2025, Section 3

INSTRUCTOR: Dr. Tsun-Zee Mai; **OFFICE:** N-312; **EMAIL:** tmai@scupi.cn
OFFICE HOURS: T: 09:00 – 11:00am & M&W: 1:00 – 4:00pm at Rm N-312, or by appointment.
LECTURES: Tue: 4:45pm – 6:25pm & Th: 8:15am – 10:00am at Rm S-204.
RECITATION:
TEXTBOOK: *James Stewart: Essential Calculus 2nd ed.*

DESCRIPTION: This is the second part of three-part calculus sequence for students in SCUPI. Topics mainly focus on single variable calculus which include: first a brief review of limits and differential calculus, then a detailed learning of applications of integration, integration techniques, improper integrals, infinite series, and vectors and the geometry of space.
COURSE OBJECTIVES: Students will develop a good understanding of three-dimensional vectors, the geometry of space. Students will acquire basic skills needed to apply integration techniques to solve a wide range of integration problems. Students will develop a basic understanding of infinite series and their applications. Evaluation of students will be determined by in-Class presentation, quizzes, homework and tests.
LEARNING OUTCOMES FOR THIS COURSE:

1) Students will develop a basic understanding of two and three-dimensional vectors, the geometry of the three-dimensional space, equations of lines and planes in three dimensions, and be able to apply these concepts when working applied problems.
2) Students will learn various techniques of integration.
3) Students will be able to apply integration techniques to solve a range of applied problems, including volume problems and applications from physics and other disciplines.
4) Students will develop a basic understanding of infinite series and their applications.

GRADE: The final grade will be based on the **score**. The score is a number determined by

Homework: 5% Quizzes: 15% Major Exams: 50% Final: 30%

The final letter grade is determined from the following table.

A: 90 – 100	A−: 85 – 90	B+: 80 – 84	B: 76 – 80	B−: 73 – 76
C+: 70 – 73	C: 66 – 70	C−: 63 – 66	D: 60 – 63	F: < 60

EXAMS: There are three 90 minutes major tests and a final exam. Tentative Dates are given in the table below. Each major test will be cumulative with more emphasis on the material after the previous test. The lowest test score may be replaced by the final exam score if the final is higher. Here is an example: if a student's grades are: quiz average (82), homework average (90), tests (70, 80, 85), and final (85), then the adjusted test scores will be 85, 80, 85. Thus the student grade determination is 82 × 15% + 90 × 5% + (85+80+85)/3 × 50% + 85× 30% = 83.97, which is a B+. The final exam will be comprehensive. There is **NO** Make up for all the quizzes and exams.

Tentative exam dates are the following:

TEST 1: 3/29	**TEST 2: 4/26**	**TEST 3: 6/7**	**FINAL: TBA**

QUIZZES: In-class 10-minutes quiz will be given on some lecture days and recitation classes.
RECITATION: We will decide on a common time for a 45-min recitation every week. Many quizzes will be held during recitation. The recitation class is allocated for answering your questions.

HOMEWORK: There will be a graded homework assignment given on each section covered. They must be handed in before the due date. **No late homework will be accepted**. Your TA will collect them and grade some problems. Homework solutions will be provided after the due date.
ATTENDANCE: You are expected to attend all the classes; however, I will not check the attendance. A student who misses a class is responsible for finding out what was covered in the class. Remember there is no makeup for all grades related activities.
MAKE-UP POLICY: No makeup work will be allowed. Some lower quiz scores will be dropped. The drop grade is to account for any missed assignments due to illness or any other circumstances.

CODE OF ACADEMIC CONDUCT: All students in attendance at the SiChuan University are expected to be honorable and to observe standards of conduct appropriate to a community of scholars. The University expects from its students a higher standard of conduct than the minimum required to avoid discipline. Academic misconduct includes all acts of dishonesty in any academically related matter and any knowing or intentional help or attempt to help, or conspiracy to help, another student. The Academic Misconduct Disciplinary Policy will be followed in the event of academic misconduct.

NON-ACADEMIC MISCONDUCT: All cell phones and other electronic devices must be turned off and out of sight while you are in the classroom. All newspapers and other materials not related to the class are to be put away once class begins. Operating these devices and reading unrelated materials while in class is disrespectful of your instructor and fellow classmates. If you fail to abide by this rule, the instructor has the right to confiscate the device or materials. If you have an emergency and need to have your phone turned on during class, ask your instructor for permission

MATERIAL COVERED: Tentative Progress:

Week of	Contents	Descriptions
1 (2/24)	Cal 1 Materials	Review Limits, Derivatives
2 (3/3)	6.1, 6.2	Integration By Parts; Trigonometric Integrations
3 (3/10)	6.2, 6.3	Trigonometric Integrations & substitutions, Partial Fractions
4 (3/17)	6.5, 6.6	Numerical integration, Improper Integrations
5 (3/24)	7.1, 7.2	Area between curves; Volumes by slicing, disk, washer methods
3/29	**10:00 – 11:30**	**Test 1 (Covers Sections 6.1 – 6.3, 6.5, 6.6, 7.1, 7.2)**
6 (3/31)	7.3, 7.4	Volume by shell method, Curve Lengths
7 (4/7)	7.4, 7.5	Surface Areas, Physical Applications
8 (4/14)	8.1, 8.2	Sequences, Series, Divergence Tests, Comparison Tests, Integral Tests
9 (4/21)	8.3, 8.4	Ratio test, Root test, Alternating Series
4/26	**10:00 – 11:30**	**Test 2 (Covers Sections 7.3 – 7.5, 8.1 – 8.4)**
10 (4/28)	8.5, 8.6	Power series, interval of convergence, Representation by power series
11 (5/5)	8.7, 8.8	Taylor series and applications
12 (5/12)	9.1, 9.2	Parametric Curves, Calculus with parametric curves
13 (5/19)	9.3 – 9.4	Polar Coordinates, Areas and lengths in Polar system
14 (5/26)	10.3 – 10.6	Lines and Curves in Space, Calculus of Vector-Valued functions
6/7	**10:00 – 11:30**	**Test 3 (Covers 8.5 – 8.8, 9.1 – 9.4)**
15 (6/2)	10.8, 10.9	Arc Length, Curvature, Motion in Space
16 (6/9)	Review	
17 (6/16)	TBA	**Final exam**
18 (6/23)		