**SCUPI – Math0235 Calculus 1&2 Section 1**

**Fall Semester, 2019**

**INSTRUCTOR:** Zheng Yang; **OFFICE:** Room 3-324A; **EMAIL:** zhengyang2018@scu.edu.cn

**TA:** Hugo Li (ME) **QQ group:** 453289025  **Recitation hours:** Friday 4 pm – 5 pm, 3-101

**OFFICE HOURS:** Tuesday, Wednesday, Friday 2 pm – 5 pm, Weekends by appointments, Room 3-324A

**LECTURES:** Monday 8:15am – 9am, 9:10am – 9:55am, Room 3-101

Tuesday 8:15am – 9am, 9:10am – 9:55am, Room 3-101

Thursday 8:15am – 9am, 9:10am – 9:55am, Room 3-101

**CREDITS:** 8 credit hours

**TEXTBOOK:** *Briggs, Cochran, Lyle: Calculus, Early Transcendentals 2nd ed.*

**DESCRIPTION:** This is the first part of two-part calculus sequence for students in SCUPI. Topics are mainly focus on single variable calculus which include a review of limits and differential calculus, applications of integration (such as finding volume of solid of revolution, curve length, surface area), integration techniques, improper integrals, infinite series, convergence tests for series, power series and applications, Taylor 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, power series, Taylor series, and their applications. Evaluation of students will be determined by in-class presentation, group work, 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.
5. Students will be able to determine convergence or divergence of various series.
6. Students will develop a basic understanding of Taylor series and the usage of Taylor series

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

***Homework: 10% Quizzes: 15% Major Exams: 45% Final Exam: 30%***

The final letter grade is determined from the following table.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| A: 90 – 100 | A−: 85 – 89 | B+: 80 – 84 | B: 76 – 79 | B−: 73 – 75 |  |
| C+: 70 – 72 | C: 66 – 69 | C−: 63 – 65 | D+: 61 – 62 | D: 60 | F: < 60 |

**EXAMS:** There are three 100 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 since the previous test. The final exam will be comprehensive. **There is NO Make up for all the quizzes and exams.**

**NOTE:** Each test may earn bonus points if the immediate subsequent test score is higher. The bonus is half of the difference of the two tests. There is no bonus for the final exam. Here is an example: if a student's grades are: quiz average (80), homework average (85), tests (70, 80, 90), and final (85), then the adjusted test scores will be 75, 85. Thus the student grade determination is

80 × 15% + 85 × 10% + (75+85+90)/3 × 45% + 85× 30% = 83.5, which is a B+. (Check this!)

Tentative exam dates are the following:

|  |  |  |
| --- | --- | --- |
| **TEST 1: The week of 10/14** | **TEST 2: The week of 11/18** | **TEST 3: The week of 12/16** |

**QUIZZES:** In-class10-minutes quiz will be given on some lecture days and during recitation hours.

**HOMEWORK:** There will be a graded homework assignment given on each section covered. They must be

completed before each expiration date and time. **No extension will be given**. For each test period you will be

allowed to drop one homework grade. The grade will be calculated by averaging the remaining homework

scores. **Homework can be worked on until all questions are correct. Be aware that some of the**

**homework problems do not have the learning aids. You can select similar question for any question**

**that you miss and try again until you get it correct.**

**LOGIN** (1) Go to the website: **www.pearsonmylabandmastering.com/global/**

**INFO:**  (2) Click on Student’s “Register”. After that you follow the instructions to register.

(3) You will need our **COURSE ID:** yang96087and an access code given below

(4) Your access code is:

(5) Please create your login name as your last name followed by your last four digits of your

student ID. For example: **smith2011@stu.scu.edu.cn**

(6) Set your Password.

**CLASSROOM RULES: Electronic devices including but not limited to iphone, smartphone, ipod, ipad, pc are NOT allowed, except for course work.**

**ATTENDANCE:** You are expected to attend all the classes. A student who misses a class is responsible for finding out what was covered in the class. **Remember there are no make ups all grades related activities.**

**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 are to 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 sequence of the sections covered in this class is:

|  |  |  |
| --- | --- | --- |
| **Week** | **Contents** | **Descriptions** |
| 9/9,10,12 | 2.3 - 2.6 | Review Limits |
| 9/16,17,19 | 3.2 - 3.11 | Review Derivatives |
| 9/23,24,26 | 4.1 – 4.7 | (Review) Applications of derivatives |
| 9/30 | 4.9, 5.1 - 5.3 | (Review) Antiderivative, Fundamental Theorem of Calculus |
| 10/8,10,12 | 5.2 - 5.5 | Integration, Substitution Method |
| 10/14,15,  17 | 6.2 – 6.4 | Area between curves, Volume of solid of revolutions |
| 10/21,22,  24 | 6.5 – 6.7 | Curve Lengths and Surface Areas, Physical Applications |
| 10/28,29,  31 | 7.2 – 7.4 | Integration by Parts, Trig. Integrations and Trig. Substitutions |
| 11/4,5,7 | 7.5, 7.8 | Partial Fractions and Improper Integrations |
| 11/11,12,  14 | 8.2 – 8.4 | Sequences, Series, Divergence and Integral Tests |
| 11/18,19,  21 | 8.5 – 8.6 | Ratio, Root, and Comparison Tests, Alternating Series |
| 11/25,26,  28 | 9.1 – 9.2 | Power Series, radius (interval) of convergence |
| 12/2,3,5 | 9.3 – 9.4 | Taylor series and applications |
| 12/9,10,12 | 11.1 – 11.4 | Dot Product and Cross Product |
| 12/16,17,  19 | 11.5 – 11.6 | Lines and Curves in Space, Calculus of Vector-Valued functions |
| 12/23,24,  26 | Review | Chapter 1 – 11 |
| 12/30-1/3 | Final Exam |  |