M 408D (Unique 53505 & 53510) – Calculus: Sequences and Series

Instructor: Tom Struppeck [struppeck@math.utexas.edu](mailto:struppeck@math.utexas.edu)

Class Meets: TTh 11:00 – 12:15 in ECJ 1.202

Office Hours: No office hours on days of tests.

TTh 10:00-10:45 a.m. in RLM 13.146

Teaching Assistant (TA): Jincheng Yang

TA Office Hours: 1:30-3:00 MW held in RLM 11.130

LAB: varies by section

53505: MW 8:00 – 8:50 in RLM 7.104

53510: MW 3:00 – 3:50 in RLM 7.104

Prerequisite: One of: M408C, M408KL, or M408NS with a grade of at least a C-

Text: James Stewart: *Calculus, early Transcendentals*, 8th edition, Cengage

Testing: Three tests during class times and lab times and a comprehensive final exam.

Homework and Quizzes: You are strongly urged to read the scheduled section in the textbook before class. We will be using iClickers during class. Also, homework will be assigned on the Quest system; there is a $30 fee for using this system.

Grading: Your grade for this class is determined by your three test scores (15% each), your homework/quiz grade (15%), and the comprehensive final exam (40%).

Course Description: This course emphasizes computational ability and geometric understanding in calculus. It isn't a theorem/proof class, but ***it is the advanced class, and it does move fast***.

Syllabus: We will cover much of Chapters 7, 9, 11, 14, and 15 of the textbook.

Calculator Policy: No calculators will be allowed on tests.

Academic Dishonesty: The University has (appropriately) a very strict academic dishonesty. Any apparent violations of the University’s academic dishonesty policy will be referred to the Dean’s Office.

Academic Accommodations: Should you need an accommodation, please come see me privately.

"The University of Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259,

471-6441 TTY."

Tentative Schedule: This is an approximate schedule to show the pace of the class. I will try to keep to this, but sometimes unpredictable events happen, and I reserve the right to modify this.

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| **Date** | **Major Topic (Tentative Schedule)** | **READINGS** |
| T 1/16 | Class Overview/Substitution Review | Review 5.5 |
| Th 1/18 | Parts + Trigonometric Integrals | Chapter 7.1/7.2 |
| T 1/23 | Trig Substitutions | Chapter 7.3-7.5 |
| Th 1/25 | Partial Fractions | Chapter 7.3-7.5 |
| T 1/30 | Improper Integrals | Chapter 7.8/9.1 |
| Th 2/1 | Differential Equations/Euler’s Method | Chapter 9.1/9.2 |
| T 2/6 | Separable Equations | Chapter 9.3/9.4 |
| Th 2/8 | Linear Differential Equations | Chapter 9.5 |
| T 2/13 | Catch-up/Review |  |
| Th 2/15 | **Test I (Chapters 7.1-9.5)** |  |
| T 2/20 | Parametric Equations | Chapter 10.1/10.2 |
| Th 2/22 | Polar Coordinates | Chapter 10.3/10.4 |
| T 2/27 | Sequences | Chapter 11.1 |
| Th 3/1 | Series | Chapter 11.2 |
| T 3/6 | The Integral Test | Chapter 11.3/11.4 |
| Th 3/8 | Comparison Tests and Alternating Series | Chapter 11.4/11.5 |
| T 3/20 | Absolute Convergence and the Ratio and Root Tests | Chapter 11.6/7 |
| Th 3/22 | Power Series | Chapter 11.8 |
| T 3/27 | Catch-up/Review |  |
| **W 3/28** | **Test II (Chapters 10.1-11.8)** |  |
| Th 3/29 | Representations of Functions as Power Series | Chapter 11.9/11.10 |
| T 4/3 | Taylor and Maclaurin Series | Chapter 11.10/11.11 |
| Th 4/5 | Functions of Several Variables | Chapter 14.1/14.2 |
| T 4/10 | Limits and Continuity & Partial Derivatives | Chapter 14.2/14.3 |
| Th 4/12 | The Chain Rule | Chapter 14.5 |
| T 4/17 | Catch-up/Review |  |
| **W 4/18** | **Test III (Chapters 11.9-14.5)** |  |
| Th 4/19 | Double Integrals over Rectangles | Chapter 15.1/15.2 |
| T 4/24 | Double Integrals over General Regions | Chapter 15.2/15.3 |
| Th 4/26 | Double Integrals in Polar Coordinates | Chapter 15.4 |
| T 5/1 | Change of Variables in Multiple Integrals | Chapter 15.10 |
| Th 5/3 | Catch-up/Review |  |
| **W 5/9** | **FINAL EXAM 9:00 am --- 12:00 pm** |  |

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**Emergency Evacuation Policy**

Every member of the university community shall be familiar with the

Emergency Evacuation Policy and understand his or her role in these

emergency situations.

In the event of a fire or other emergency, it may be necessary to

evacuate a building rapidly. Upon the activation of a fire alarm or

the announcement of an emergency in a university building, all

occupants of the building are required to evacuate and assemble

outside. Once evacuated, no one may re-enter the building without

instruction to do so from the Austin Fire Department, University of

Texas at Austin Police Department, or Fire Prevention Services office.

University faculty members are responsible for pointing out their

classrooms' building emergency evacuation routes and emergency

procedures to students at the beginning of each semester.

Furthermore, faculty, staff, and students should familiarize

themselves with all the exit doors of each room and building they

occupy at the university, and should remember that the nearest exit

routes may not be the same as the way they typically enter buildings.

Students requiring assistance in evacuation shall inform their

instructors in writing during the first week of class. Faculty

members must then provide this information to the Fire Prevention

Services office by fax (512-232-2759), with "Attn. Mr. Roosevelt

Easley" written in the subject line.

Faculty members should be prepared to give appropriate instructions

in the event of an evacuation. Students should follow the

instructions of faculty members and class instructors during

emergency evacuations.

We can most effectively prepare for and cope with emergencies by

working together. Thus, everyone has a duty to ensure other

occupants of university buildings are aware of emergencies, and to

aid anyone requiring assistance in evacuation. People should only

provide this aid to the best of their abilities, however, and no one

is expected to endanger themselves in order to assist with the

evacuation of others.

Information regarding emergency evacuation routes and emergency

procedures can be found

at <<http://www.utexas.edu/emergency>>www.utexas.edu/emergency.

Classroom Instruction and Recommended Syllabus Information

To implement this policy and reinforce building evacuation

procedures, each faculty member shall provide the following

information and instructions to students:

Occupants of buildings on The University of Texas at Austin campus

are required to evacuate buildings when a fire alarm is activated.

Alarm activation or announcement requires exiting and assembling

outside.

Familiarize yourself with all exit doors of each classroom and

building you may occupy. Remember that the nearest exit door may not

be the one you used when entering the building.

Students requiring assistance in evacuation shall inform their

instructor in writing during the first week of class.

In the event of an evacuation, follow the instruction of faculty or

class instructors.

Do not re-enter a building unless given instructions by the

following: Austin Fire Department, The University of Texas at Austin

Police Department, or Fire Prevention Services office.

Behavior Concerns Advice Line

BCAL: 232-5050