

Calculus II
MATH 2413, section 30 & 45

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Office hours:

Monday – Thursday 10:00 AM – 10:50 AM and 1:00 – 2:00, or by Appointment

Feel free to text or email me. I get them both on my phone.

Course description – Calculus II is the continuing study of integration and the many techniques and applications available to you. It is a virtual fountain of information you will use in your future courses and careers. The vast amount of information you will obtain in this course is why students feel it is so difficult.

Course Goals

- 1.) To prepare our students for the wide applications of calculus in all areas, but to name a few the life sciences, physical sciences, and engineering.
- 2.) To equip our students with the analytical thinking skills necessary to be successful in pursuing their life goals.

Text and Materials

Textbook- *Thomas' Calculus, 12th Edition*, by George B. Thomas, Maurice D. Weir and Joel R.Hass

Expectations

- **Course Schedule** – Throughout this course we will cover approximately 1 textbook section every two days. We will at times move faster and at other times slower. The schedule will also accommodate additional material not in your textbook that will assist you in your current and future mathematics and engineering course. A schedule is found below. (I will not look at it again beyond the first class day.) I would rather have the flexibility of delaying moving forward when I feel based on past experience or your comments that we need to spend more time on a topic.
- It is extremely important that you be an active and self cognizant learner in this course. Do not let yourself fall behind! If you know you are struggling with a topic COME GET SOME HELP!!!!!!!

Week	Course Topics
1 (Jan 14 – 18)	Course Introduction Vectors in 3 Dimensional Space and Their Dot and Cross Products
2 (Jan 22 – 25)	Section 7.2 - The Natural Log Function Section 7.3 – The Exponential Function and Logs with Other Bases
3 (Jan 28 – 31)	Section 7.3 – Logs of Other Bases Section 7.6 - Inverse Trig Functions
4 (Feb 4 – 7)	Exam 1 Section 8.1 – Integration by Parts
5 (Feb 11 – 14)	Section 8.2 – Trigonometric Integrals Section 8.3 – Trig Substitutions
6 (Feb 18 – 21)	Section 8.3 – Continued Section 8.4 – Integration by Partial Fraction Expansion
7 (Feb 25 – 28)	Exam 2 Section 6.1 – Volumes of Solids by Slicing (Disk or Washer Method) Section 6.2 – Volumes of Solids Cylindrical Shell Method
8 (Mar 4 – 7)	Section 6.2 – Continued Section 6.3 Arc Length Section 6.4 Surface Area of Solids
9 (Mar 11 – 14)	Spring Break
10 (Mar 18 – 21)	Section 6.5 – Work and Fluid Forces (Additional Handout) Section 6.6 – Moments and Centers of Mass
11 (Mar 25 – 29)	Exam 3 Section 7.5 – L’hopital’s Rule and Limits of Indeterminate Forms
12(April 1 – 4)	Section 8.7 – Improper Integrals Section 10.1 Sequences
13 (April 8 – 11)	Section 10.2 - Infinite Series Introduction Section 10.3 - Integral Test for Infinite Series
14 (April 15 – 18)	Section 10.4 - Comparison Test for Infinite Series Section 10.5 – The Ratio and Root Test for Infinite Series
15 (April 22 – 25)	Section 10.6 – Alternating Series Section 10.7 - Power Series
16 (April 29 – May 1)	Section 10.8 – Taylor and McLaurin Series Exam 4
17 (May 7 – 10)	Final Exam – TBA when the final exam schedule is posted

- **Instructional Methods** – One of my favorite mathematics professors here at WTAMU likes to say, “Math is not a spectator sport!” Because this could not be more true, I will have you problems in class, either individually or in groups, whatever you are the most comfortable with. I may try posting videos online a bit this semester and you watch them before class when the material is more time consuming, allowing us more time in class for active participation.
- **Homework** - Experts in business training will tell you that you must repeat (or practice) a concept at least **9 times** for it to be retained for any length of time! At the conclusion of each day, you will be assigned problems from your textbook to be completed by the next

meeting. I will collect the homework periodically and grade selected problems in order to encourage you to do it. Regardless of whether it is collected or not you must complete the homework in order to have a reasonable chance of success in this course! **To nudge you gently, if you complete your homework and keep it in a neat and orderly folder that I can quickly check prior to the final exam.** You may have this folder for the final. Absolutely **no late homework** will be accepted.

- **Quizzes** – When I do not have time to take up the homework, I like to put you in a testing situation early by giving short in class or online quizzes. These count the same as homework grades and will tell you if you are ready for an exam or not.
- **Projects** – Projects will be assigned that allow you to apply the concepts learned in this course to problems in the life sciences and engineering.
- **Technology** – I am asked what type of calculator you should purchase as you begin your study of calculus. If you are an engineer or a mathematics major that intends to find a career in industry, I recommend the TI Inspire. Keep in mind that your mathematics instructors will probably not let you use this calculator on an exam while you are in calculus. If this is your last math course or you are considering 4-8 or secondary mathematics or science education as a career field, I recommend a TI-84. It will take you through all of your mathematics education courses and into you're a career.
- **Exams** - There are 4 exams in this course as well as a comprehensive final. I will notify you of an exam at least 1 week prior.
- **Your Role as a Student in this Course** –
Just to be clear about my expectations of you. I expect you as a student to do all of the following:
 - 1.) Come to class every day unless you are on your deathbed.
 - 2.) Come to class prepared to work! Take advantage of the time we have together.
 - 3.) I expect you to treat all participants, both myself and your fellow students, with respect.
 - 4.) Complete or at least attempt to complete your homework each day.
 - 5.) If you get home and find you cannot work the problems, come to my office, e-mail me, call a friend from class, go to the Math Lab, or contact a tutor at Smarthinking.com for assistance. This course builds. If you do not understand a concept the next day will only be worse!
 - 6.) You should spend at least twice the amount of time you are in class each week doing homework or project problems.

Grading Policy

The following grading scale will be observed and is non negotiable.

- **A 90 – 100**
- **B 80-89**
- **C 70-79**
- **D 60-69**
- **F 0 – 59**

Grade Determination

- 4 Exams – 65%
- Projects – 15% (or equivalent to one exam)
- Final Exam – 20%

Important Dates: Friday, March 1st is the last day to drop with a “guaranteed X”. Between this date and up until Friday, March 29th, if you drop the course, you will receive the grade you have at that time. March 29th is the absolute last day to drop a course.

Homework/Quizzes:

At each examination you will have the option of bringing a folder containing the homework exercises from the sections assessed on the exam. These exercises will be checked for completion and correctness (randomly selected problems for grading). Bonus points will be added to your exam based on the following distribution:

- 5 points – 90 to 100 on homework assessment
- 4 points – 80 to 89 on homework assessment
- 3 points – 70 to 79 on homework assessment
- 2 points – 60 to 69 on homework assessment
- 1 point – 50 to 59 on homework assessment
- 0 points – below 50

Course Objectives

After completing this course the student should be able to:

- Calculate area between curves, volumes of solids, lengths of plane curves, and surface areas of solids at revolution using integration
- Find derivatives and integrals of exponential, logarithmic, and inverse trigonometric functions
- Learn techniques of integration including integration by parts, trigonometric substitutions, and partial fractions
- Find indeterminable limits using L’Hopital’s rules
- Find limits of infinite sequences and sums of infinite series
- Determine convergence or divergence of infinite series
- Express elementary functions as power series

Help Resources for this and Future Mathematics Courses

- **Your instructor.** She doesn’t bite much and is usually quite helpful.
- The **MATHLAB in CC 411** is manned by upper level and graduate mathematics and engineering majors who would be happy to help you or just give you a pat on the back while you work on your homework. And best of all, I am right down the hallway!
- **Smart Thinking** is an online tutorial service purchased by the university. It is available 24 hours a day and the link is found on our WTCLASS webpage.

- **Educational Services Tutoring (EST)**: EST offers free one-on-one tutoring in a variety of subjects including math, and it is located in the Student Success Center on the 1st floor of the Classroom Center, CC 106, phone, 651-2341.
- **Note that all of these services are FREE, so there is no reason why you can't find help somewhere.**

Disability Statement:

West Texas A&M University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to register with Student Disability Services (SDS) and to contact faculty members in a timely fashion to arrange for suitable accommodations. The SDS Office is located in the Classroom Center, room 106 and their phone number is 806-651-2335.

Cell Phone and Pager Policy:

Cell phones and pagers must be in the silent or off mode while you are in class. Attention to the teaching-learning process is the priority in the classroom; therefore, students must not text during class time.

The University's Academic Integrity Statement:

It is the responsibility of students and instructors to help maintain scholastic integrity at the University by refusing to participate in or tolerate scholastic dishonesty. Commission of any of the following acts shall constitute scholastic dishonesty. This listing is not exclusive of any other acts that may reasonably be said to constitute scholastic dishonesty: acquiring or providing information for any assigned work or examination from any unauthorized source; informing any person or persons of the contents of any examination prior to the time the examination is given in subsequent sections of the course or as a makeup; plagiarism; submission of a paper or project that is substantially the same for two courses unless expressly authorized by the instructor to do so. (2000-2001, CODE OF STUDENT LIFE, Rules and Procedures for Students, West Texas A&M University).

A complete statement regarding scholastic dishonesty can be found in the Student Code of Life at <http://wtamu.edu/webres/File/Student>

Acceptable Student Behavior:

Classroom behavior should not interfere with the instructor's ability to conduct the class or the ability of other students to learn from the instructional program (*Code of Student Life*).

Unacceptable or disruptive behavior will not be tolerated. Students engaging in unacceptable behavior may be instructed to leave the classroom. Inappropriate behavior may result in disciplinary action or referral to the University's Behavioral Intervention Team. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc.

Evacuation Statement:

When you receive notice to evacuate the building, please evacuate promptly but in an orderly manner. Evacuation routes are posted in various locations indicating all exits, outside assembly

area, location of fire extinguisher, fire alarm pull stations, and emergency telephone numbers (651-5000 or 911). In the event an evacuation is necessary; evacuate immediately; do not use elevators; take all personal belongings with you; report to outside assembly area and wait for further information; students needing assistance in the evacuation process should bring this to the attention of the instructor at the beginning of the semester.

ADA Statement:

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