



WACO, TEXAS

**COURSE SYLLABUS
AND
INSTRUCTOR PLAN**

CALCULUS II

MATH 2414.0010

Dr. DEANNA R. BARNES

NOTE: This is a 16-week Face-to-Face course.

INTRODUCTION TO STATISTICS

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Course Description:

Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. Graphing calculator required.

Prerequisites and/or Corequisites:

MATH 2413 or consent of division chair. Semester Hours 4 (4 lec)

Course Notes and Instructor Recommendations:

Math 2414 in a **face-to-face format** involves **mandatory class meetings** along with **online discussions, homework assignments from the textbook, and in-person exams.**

- Students will use **MyMathLab to access the online textbook only.** MyMathLab is a resource, but it does **not contain homework assignments** for this course.
- **Class notes and lecture videos** will be available in Brightspace to support your learning.
- Homework will be **assigned from the textbook, discussed in class, and must be completed on paper.**
- **⚠ All homework must be uploaded weekly to Brightspace.**

Instructor Information:

Instructor Name: Deanna R. Barnes
MCC Email: dbarnes@mclennan.edu
Office Phone Number: 254-299-8810
Cell Phone Number: 713-459-5045

(Text first, then I will call back. Be sure to tell me who you are and which class you are in.)

Office Location: MATH 218

Office/Teacher Conference Hours: MW 8:30 – 9:30 & 1:00 – 2:00 Room 123.

Text for Zoom meeting any time 8:00am to 8:00pm M-S

Link to Zoom Meeting Room: [Personal ID Number 2542998810](#)

Required Text & Materials:

Title: *Thomas' Calculus: Early Transcendentals*

Author: Weir & Hass

Edition: 15th edition

Publisher: Addison Wesley

ISBN: 9780137559794

Required graphing calculator – TI-83, TI-83 Plus, TI-84, or TI-84 Plus

ABSOLUTELY NO TI-89, HP-48 or similar CAS calculators allowed (symbolic integration capable)

MCC Bookstore Website: <http://www.mclennan.edu/bookstore/>

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Methods of Teaching and Learning:

- Students are expected to **read assigned textbook chapters prior to lecture**. This preparation will allow you to engage more fully during class.
- **Lecture notes** will be available in Brightspace. Students may also view **supplemental videos** for review and additional learning support.
- **Homework** must be uploaded **weekly to Brightspace** for a completion grade. There is **no extra credit**.
- Active participation in class — asking questions, responding to questions, and engaging with the material — typically leads to improved test performance, making extra credit unnecessary.
- **Announcements** will be posted in Brightspace in advance if a class meeting must be canceled. Please ensure your **Brightspace notifications** are set to send text or email alerts whenever announcements are posted.

Course Objectives and/or Competencies:

Upon completion of the course, the student will be able to:

1. Use the concepts of definite integrals to solve problems involving area, volume, work, and other physical applications.
2. Use substitution, integration by parts, trigonometric substitution, partial fractions, and tables of anti-derivatives to evaluate definite and indefinite integrals.
3. Define an improper integral.
4. Apply the concepts of limits, convergence, and divergence to evaluate some classes of improper integrals.
5. Determine convergence or divergence of sequences and series.
6. Use Taylor and Maclurin series to represent functions.
7. Use Taylor or Maclurin series to integrate functions not integrable by conventional methods.
8. Use the concept of polar coordinates to find areas, lengths of curves, and representations of conic sections.

Important Dates:

Drop for nonattendance – January 28, 10:00 am

Student initiated withdrawal – March 26, 10:00 am

Last day to submit work – May 3, 10:00 pm

Course Attendance/Participation Guidelines:

If a student is not in attendance in accordance with the policies outlined in this syllabus as of the **course census date**, faculty are required to drop the student from the roster before certifying the class list. A student's financial aid will be re-evaluated accordingly, and funding will only apply to courses in which the student is enrolled and attending as of the census date.

Attendance/Participation Policy

- **Before the 60% point of the semester:**
 - A student who is absent for **25% or more** of a face-to-face or blended course will be withdrawn with a grade of **W**.
 - A student who misses **25% or more of assigned work** in an online course will also be withdrawn with a grade of **W**.
 - A student may voluntarily request withdrawal with a grade of **W** before this deadline.

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- **After the 60% point of the semester:**
 - A student may request withdrawal **only if passing** at the time of the request.
 - Otherwise, the final grade earned — after all missing work is factored in — will be assigned at the end of the semester.

Late Work, Attendance, and Make Up Work Policies:

- **Exams:** There will be **no make-up exams**. Your lowest exam grade will be dropped; however, if you miss an exam, that missed exam will count as your dropped grade. All exams must be taken **in class**.
- **Homework:** All homework must be submitted through **Brightspace**. **⚠ No late homework will be accepted.**
- **Student Responsibility:** Enrollment in this course does not guarantee advancement to the next course level. The final responsibility for learning and mastering the material lies with the **student**.

Course Outline or Schedule:

To be successful in this course, it is strongly recommended that you:

1. **Prepare before class** by reading the assigned textbook sections in advance.
2. **Attend all class meetings** and engage actively by asking and answering questions.
3. **Access Brightspace** each week to review posted lecture notes, videos, and announcements.
4. **Complete assigned homework from the textbook** promptly and upload it to Brightspace each week. Homework will be discussed in class and is essential for keeping pace with the material.
5. **Stay on schedule.** Do not skip or fall behind on assignments — the course is structured to move you through the material step by step as efficiently as possible.

✓ Consistent preparation and participation each week are key to success.

*Use the **Calendar** and **assignment table** to find the homework problems due each week. Work them on paper and **submit to Brightspace for a grade** by the posted due date.*

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Component Due Date	Assignments Due by 11:00pm CST	Component Due Date	Assignments Due by 11:00 pm CST
Week 1 January 18	Discussion 1 Sec 6.1 & 6.2	Week 9 March 22	Discussion 9 Sec 10.1 – 10.3
Week 2 January 25	Discussion 2 Sec 6.3 – 6.5	Week 10 March 29	Discussion 10 Sec 10.4 – 10.6
Week 3 February 1	Discussion 3 Sec 7.1 – 7.4	Week 11 April 5	Discussion 11 Review (on campus) Exam 3
Week 4 February 8	Discussion 4 Review (on campus) Exam 1	Week 12 April 12	Discussion 12 Sec 10.7 – 10.9
Week 5 February 15	Discussion 5 Sec 8.1 – 8.3	Week 13 April 19	Discussion 13 Review (on campus) Exam 4
Week 6 February 22	Discussion 6 Sec 8.4 & 8.5	Week 14 April 26	Discussion 14 Sec 11.1 – 11.3
Week 7 March 1	Discussion 7 Sec 8.6 & 8.8	Week 15 May 3	Sec 11.4 & 11.5 Review for Final Exam
Week 8 March 8	Discussion 8 Review (on campus) Exam 2	May 4	Final Exam 11:00am – 1:00pm

Week	Section	Topic	Page	Problems
1	6.1	Volumes Using Cross-Sections	373	17 – 45 odd, 51, 53, 55
	6.2	Volumes Using Cylindrical Shells	380	1 – 11 odd, 15 – 29 odd, 33, 35, 37
	6.3	Arc Length	387	1 – 13 odd
2	6.4	Areas of Surfaces of Revolution	392	1- 5 (odd, part a only), 13 – 21 odd
	6.5	Work and Fluid Forces	400	3 – 13 odd
	7.1	The Logarithm Defined as an Integral	429	1 – 25 odd, 35, 47, 49, 51
3	7.2	Exponential Change & Separable Diff. Eq.	438	1 – 21 odd
	7.3	Hyperbolic Functions	446	1, 3, 5, 13, 17, 41, 49
4	7.4	Relative Rates of Growth	453	1 – 9 odd
		Exam 1		
5	8.1	Using Basic Integration Formulas	461	1 – 41 odd
	8.2	Integration by Parts	467	1 – 65 EOO
6	8.3	Trigonometric Integrals	474	1 – 49 EOO, 51 – 67 odd
	8.4	Trigonometric Substitution	479	1 – 27 odd, 39 – 55 odd
	8.5	Integration by Partial Fractions	486	1 – 29 odd, 33 – 41 odd, 55, 59, 67, 69
7	8.6	Integration Tables and Computer Alg. Sys.	492	1 – 53 EOO
	8.8	Improper Integrals	512	1 – 65 EOO
8		Exam 2		
9	10.1	Sequences	582	1 – 11 odd, 13 – 63 EOO
	10.2	Infinite Series	593	1 – 71 EOO, 77 – 85 odd
	10.3	The Integral Test	600	1 – 39 odd
10	10.4	Comparison Tests	606	1 – 45 odd
	10.5	The Ratio and Roots Test	612	1 – 43 odd, 57 – 61 odd
	10.6	Alternating Series, Abs. and Cond. Convergence	618	1 – 43 odd, 47
11		Exam 3		
	10.7	Power Series	629	1 – 17 odd, 23, 25, 27, 39
12	10.8	Taylor and Maclurin Series	636	1 – 17 odd, 23 – 39 odd

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	10.9	Convergence of Taylor Series	643	1 – 17 odd, 31, 35
13		Exam 4		Comprehensive Chapter 10 Test
	11.1	Parameterizations of Plane Curves	669	1 – 17 odd, 29 – 35 odd
14	11.2	Calculus with Parametric Curves	675	1, 5, 9, 13 – 27 odd
	11.3	Polar Coordinates	680	1 – 19 odd, 27 – 43 odd, 53 – 65 odd
	11.4	Graphing in Polar Coordinates	684	1 – 19 odd
	11.5	Areas and Lengths in Polar Coordinates	689	1 – 15 odd, 21, 23, 25
15		Exam 5		
		Review for Final Exam		
16		Final Exam		Objectives 1 – 7

***EOO means you are to work Every Other Odd problem** for example (1 – 13 EOO is 1, 5, 9, 13)

Course Grading Information:

The final class average will be determined by the following guidelines:

- *4 or more major examinations 60%
- Semester (comprehensive) examination 20%
- **an average of daily work and quizzes 10%
- Discussion Participation. 10%

The lowest discussion, homework and exam grade will be dropped. The comprehensive final exam will NOT be dropped. NO LATE HOMEWORK will be accepted.

Student Behavioral Expectations or Conduct Policy:

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular discussion participation, and an attitude that seeks to take full advantage of the education opportunity.

Instructor Attendance Policy:

Make attendance a priority. Attendance will be counted based on lecture attendance and submission of assignments. Attendance is very important in this class. In order to receive credit for the course, you must be in attendance at least 75% of the time scheduled for the class.

[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)

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Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.