Midland College Syllabus
2021 - 2022
MATH 2414
Calculus II
4 Semester Credit Hours
(4 Lecture/0 Lab)

Instructor Information:

Instructor: Click here to enter text.
Office: Click here to enter text.
Phone: Click here to enter text.
Email: Click here to enter text.
Office Hours: Click here to enter text.

Notice: Students MUST actively participate by completing an academic assignment required by the instructor by the official census date. Students who do not actively participate in an academically-related activity may be reported as never attended and dropped from the course.

Course Description:
This course is designed to enable students to become proficient in differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. Prerequisite: A C or better in MATH 2413.

Text, References and Supplies:

- Larson/Edwards, Calculus: Early Transcendental Functions, 7th ed., Cengage.
  - ISBN: 978-1-33-755251-6 (hardback book only)
  - ISBN: 978-1-33-788895-0 (loose-leaf book with WebAssign)
- Scientific calculator
- WebAssign is required by some instructors.

Student Learning Outcomes
Upon successful completion of this course, students will:

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 MacLaurin series to represent functions.
7. Use Taylor or MacLaurin 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.

Student Contributions, Responsibilities and Class Policies:
Students will be expected to comply with the policies outlined in the Midland College Catalog. Instructor policies concerning attendance and academic behavior are consistent with the policies in the catalog. Regular attendance is required to do well in this class. Students will be evaluated based on the results of assessments outlined in the syllabus and Instructor Handout. At least 70% of the course grade will come from proctored assignments.

Attendance Policy:
It is the responsibility of the students to know the policies and procedures associated with absences. These policies are set by instructors. Excused absences may include, but are not limited to, illness, severe weather, and death in the family. Instructors will determine whether or not an absence is excused. Please visit the Midland College Catalog

Withdrawal Policy:
Students who have enrolled in a Texas public institution of higher education as a first-time freshman in fall 2007 or later are permitted to drop no more than six courses during the entire undergraduate career. This limit includes all transfer work taken at a Texas institution of higher education and to second baccalaureate degrees. This statute was enacted by the State of Texas in spring 2007 (Texas Education Code 51.907). Any course that a student drops after Census Day is counted toward the six-course limit if "(1) the student was able to drop the course without receiving a grade or incurring an academic penalty; (2) the student's transcript indicates or will indicate that the student was enrolled in the course; and (3) the student is not dropping the course in order to withdraw from the institution." Please visit the Midland College Catalog

Scholastic Dishonesty:
Midland College does not tolerate scholastic dishonesty or academic misconduct in any form. Please read the Student Rights & Responsibilities section in the Midland College Catalog for more information.

Evaluation of Students:
Students will be evaluated based on grades which may including the following but are not limited to:

Assessments	Percentage of Grade	Grade Range
Exams (proctored)	55-70%	90-100 A
Quizzes/Assignments/MATLAB	10-20%	89-80 B
Final Exam (proctored)	20-25%	79-70 C
		69-60 D
		59-0 F

Students will be evaluated based on the results of examinations given throughout the semester. Your lecture instructor will inform you on the first day of class as to the tentative dates and content for each exam. Students are expected to complete each exam. Your instructor will inform you on the first day of class as to make-up procedures for missed exams and any exemption procedures if they apply (See Instructor Handout).

Common Assessment:

All sections of this course have a common assessment. The common assessment for this course is shown in the schedule and is noted as such (see Instructor Handout).

Course Schedule:

This class meets for 4 contact hours per week. For a tentative schedule of the class meetings and material to be covered during those meetings, please refer to the schedule distributed to each student on the first class meeting (See Instructor Handout).

Course Outline:

Chapter 7: Applications of Integration

- 7.1 Area of a Region Between Two Curves
- 7.2 Volume: The Disk Method
- 7.3 Volume: The Shell Method
- 7.4 Arc Length and Surfaces of Revolution
- 7.5 Work
- 7.6 Moments, Centers of Mass, and Centroids
- 7.7 Fluid Pressure and Fluid Force

Chapter 8: Integration Techniques and Improper Integrals

- 8.1 Basic Integration Rules
- 8.2 Integration by Parts
- 8.3 Trigonometric Integrals
- 8.4 Trigonometric Substitution
- 8.5 Partial Fractions
- 8.6 Numerical Integration
- 8.7 Integration by Tables and Other Integration Techniques
- 8.8 Improper Integrals

Chapter 9: Infinite Series

- 9.1 Sequences
- 9.2 Series and Convergence
- 9.3 The Integral Test and *p*-Series
- 9.4 Comparisons of Series
- 9.5 Alternating Series
- 9.6 The Ratio and Root Tests
- 9.7 Taylor Polynomials and Approximations
- 9.8 Power Series

9.9 Representation of Functions by Power Series
9.10 Taylor and Maclaurin Series

Chapter 10: Conics, Parametric Equations, and Polar Coordinates
10.1 Conics and Calculus
10.2 Plane Curves and Parametric Equations
10.3 Parametric Equations and Calculus
10.4 Polar Coordinates and Polar Graphs
10.5 Are and Arc Length in Polar Coordinates
10.6 Polar Equations of Conics and Kepler's Laws

Non-Discrimination Statement

Midland College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding the non-discrimination policies:

Tana Baker
Title IX Coordinator/Compliance Officer
3600 N. Garfield, SSC 131
Midland, Texas 79705
(432) 685-4781
tbaker@midland.edu

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

Americans with Disabilities Act (ADA) Statement:

Midland College provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit www.midland.edu/accommodation and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.

Math & Science Division Information:

Division Office: AHSF 124	(432) 685-4561
Division E-Mail: mns@midland.edu	
Department Chair: Dr. Krista Cohlmia	(432) 685-4541
Dean: Dr. Miranda Poage	
Secretary: Sarah Anderson	
Clerk: Liliana Orcutt	

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