Midland College Syllabus
2022-2023
MATH 1332
Quantitative Reasoning
3 Semester Credit Hours
(3 Lecture/0 Lab)
Core Curriculum Course

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:
Intended for Non-STEM (Science, Technology, Engineering, and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology, and communications should be embedded throughout the course. Additional topics may be covered.

A final project applying the techniques and analysis described in the above course description is required.

Core Objectives:
This course fulfills the three-hour Mathematics requirement in the Midland College Core Curriculum. The Core Curriculum is a set of courses that provide students with a foundation of knowledge, skills and educational experiences that are essential for all learning. The Core Curriculum is available in the Midland College Catalog. As part of the core, this course addresses the following three objectives:

> Critical Thinking Skills – Students will demonstrate critical thinking skills by analyzing and applying concepts of sets, logic and statistical reasoning to mathematical situations in course assignments and exams.
>
> Communication Skills – Students will demonstrate communication skills in written, oral, and visual form within the classroom setting in the areas of sets, logic, finance, statistics and probability through instructor posed questions, collaborative peer assignments, and exams.

Empirical and Quantitative Skills – Students will demonstrate empirical and quantitative skills by analyzing real-world applications of functions, financial management, and probability through course assignments and exams.

Text, References and Supplies:

- Bolker, Common Sense Mathematics
  - ISBN:9781470461348
- MyMathLab Access Code only
  - ISBN: 978-0-135-90353-7
- Scientific calculator
- Computer access is required.
- MyMathLab code is required by some instructors.

Student Learning Outcomes:

1. Apply the language and notation of sets.
2. Determine the validity of an argument or statement and provide mathematical evidence.
3. Solve problems in mathematics of finance.
4. Demonstrate fundamental probability/counting techniques and apply those techniques to solve problems.
5. Interpret and analyze various representations of data.
6. Demonstrate the ability to choose and analyze mathematical models to solve problem from real-world settings, including, but not limited to, personal finance, health literacy, and civic engagement.

Student Contributions, Responsibilities and Class Policies:

Students will be expected to comply with the policies outlined in the Midland College student handbook. Instructor policies concerning attendance and academic behavior are consistent with the policies in the student handbook. Regular attendance is required to do well in this class.
Students will be evaluated based on the results of examinations given throughout the semester.

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

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).

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 MC Student Handbook on this subject.
Please visit the Midland College Catalog.

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

Assessments	**Percentage of Grade**	**Grade Range**
Proctored Exams	30-50%	90-100 A
Assignments	0-10%	89-80 B
Projects	25-35%	79-70 C
Reports	25-35%	69-60 D
		59-0 F

Course Schedule:
This class meets for 3 contact hours per week. For a specific 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 2: Approaches to Problem-Solving
- 2A Understand, Solve, and Explain
- 2B Extending Unit Analysis
- 2C Problem-Solving Hints

Chapter 3: Numbers in the Real World
- 3A Uses and Abuses of Percentages
- 3B Putting Numbers in Perspective

- 3E How Numbers Can Deceive: Polygraphs, Mammograms, and More

Chapter 4: Managing Money
- 4A Taking Control of Your Finances
- 4B The Power of Compounding
- 4C Savings Plans and Investments
- 4D Loan Payments, Credit Cards, and Mortgages

Chapter 8: Exponential Astonishment
- 8A Linear vs Exponential Growth

Chapter 5: Statistical Reasoning
- 5A Fundamentals of Statistics
- 5B Should You Believe a Statistical Study
- 5C Statistical Tables and Graphs
- 5D Graphics in the Media
- 5E Correlation and Causality

Chapter 6: Putting Statistics to Work
- 6A Characterizing Data
- 6B Measures of Variation

Chapter 1: Thinking Critically
- 1A Living in the Media Age
- 1C Sets and Venn Diagrams
- 1E Critical Thinking in Everyday Life

Chapter 7: Probability: Living with the Odds
- 7A Fundamentals of Probability
- 7B Combining Probabilities

Essays
Chapter 11: Mathematics and the Arts
- 11A Mathematics and Music
- 11B Perspective and Symmetry

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.

Continuity of Instruction Statement:
In the event that on campus activities are suspended due to extenuating circumstances, such as weather or quarantine, the instructor will continue instruction in a manner that best supports the course content and student engagement. In this event, your instructor will notify students of the change via Click here to enter text. At that time, they will provide details about how instruction and communication will continue, how academic integrity will be ensured, and what students may expect during the time that on campus activities are suspended. If a student becomes unable to continue class participation due to extenuating circumstances, (e.g., health and safety, loss of power, etc.) the student should contact their instructor and advisor for guidance. Resources are available to students via the SOS program. Information can be found at https://www.midland.edu/services-resources/student-services/sos.php.

Grievances or complaints:
Concerns should be expressed as soon as possible to allow for early resolution. Midland College encourages students to discuss their concerns with their instructor first. If you feel uncomfortable discussing your situation with your instructor, students should discuss their concerns with the Chair of the appropriate department (Biology Chair – Mr. Tomas Hernandez (432-685-6751), Chemistry Chair – Mr. John Anderson (432-685-6737), Engineering and Physics Chair – Dr. Brian Flowers (432-685-4586), Geology Chair – Mr. Antony Giles (432-685-5580), Kinesiology Chair – Ms. Sheena Thompson (432-685-4579), Math Chair – Dr. Krista Cohlmia (432-685-4541) then the Dean of Math and Science – Dr. Miranda Poage (432-685-4561). If a resolution is still not possible, students may proceed with the formal complaint process.
http://catalog.midland.edu/content.php?catoid=14&navoid=2579#grievances-and-complaints.

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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