



MA14000 Course Syllabi

Course Title: Practical Quantitative Reasoning

Instructor Email: ma14000@purdue.edu

Course Number: MA14000

Last Updated: Fall 2026

Instructor Name: Dr. [Name]

Course Semester: Fall 2026

Office Hours: by appointment

Office Location: [Location]

Course Description:

A course for liberal arts students that shows mathematics as the language of modern problem solving. The course is designed around problems concerning management science, statistics, social choice, size and shape, and computer science. Applications in quality control, consumer affairs, wildlife management, human decision making, architectural design, political practices, urban planning, space exploration, and more may be included in the course.

Course Prerequisites:

MA 12401 or 11100 with grade of C- or better, placement by departmental exam, or instructor permission

Course Access:

All assignments, due dates, and announcements will be communicated through Canvas, as well as in person and in this syllabus.

MyMathLab (MML) is the interactive software package provided by the publisher to accompany your textbook

- MML is where you will do all graded homework. In addition, you may choose to watch videos of example problems, work sample tests, and access your individualized Study Plan within MyMathLab.
- You must always enter MyMathLab through Canvas
 - login to Canvas, <https://warsawcs.instructure.com/login/ldap>
 - choose this course, Quantitative Reasoning S1, from your course list, and then choose Access Pearson from the menu on the left

Course Goal:

Quantitative reasoning is the ability to analyze numerical information and to determine which mathematical concepts, skills, and procedures can be applied to solve real-world problems. The course is designed to assist you in developing skills for collecting, analyzing, and drawing appropriate conclusions from numerical data with the primary objective of improving your quantitative reasoning ability.

Indiana College Core Area 3 Quantitative Reasoning Competencies:

- 3.1. Interpret information that has been presented in mathematical form*.
- 3.2. Represent information/data in mathematical form* as appropriate *mathematical form = functions, equations, graphs, diagrams, tables, words, and geometric figures.
- 3.3. Demonstrate skill in carrying out mathematical (e.g. algebraic, geometric, logical, statistical) procedures flexibly, accurately, and efficiently to solve problems.
- 3.4. Analyze mathematical arguments, determining whether stated conclusions can be inferred.
- 3.5. Communicate which assumptions have been made in the solution process.
- 3.6. Analyze mathematical results in order to determine the reasonableness of the solution.
- 3.7. Cite the limitations of the process where applicable. Communication
- 3.8. Clearly explain the representation, solution, and interpretation of the math problem.

Student Learning Objectives:

By the end of the semester, you should be able to:

1. Display a basic understanding of personal finances, including savings, loans, investments, and credit scores.
2. Compute/construct and interpret basic descriptive statistics and statistical graphs.
3. Draw conclusions from and make informed decisions about normal distributions, implementing the Empirical rule and z-scores.
4. Apply counting techniques to count the total number of ways to select or arrange objects or events.
5. Apply the basic concepts of probability theory and describe how these concepts relate to statistical analysis.
6. Implement the basic properties of Graph Theory to see how graphs can be used to solve a diverse series of realistic problems

Learning Resources & Texts

- **Required Textbook:** Thinking Mathematically, by Blitzer, 8th Edition. This text, as well as MyMathLab, will be provided to you at no additional cost.
- **Calculator:** Either a graphing or scientific calculator is required. Desmos on your iPad is okay, but your iPad will be locked down during a test

Assignments

- **Homework:** Homework counts as 20% of your final grade. Homework will be either through MML or on paper. You can work all homework problems multiple times. In MML, you will click “similar problem” at the bottom of the page. Any late homework will incur a 10% penalty and will not be accepted after the current unit assessment.
- **Tests:** Tests count as 80% of your final grade. Retakes will not be allowed. If you miss a test, you will be automatically signed out for your next available CORE session. Some units will have projects which will be graded and categorized as a test grade.

Grading Scale:

A 90-100%
B 80-89%
C 70-79%
D 60-69%
F below 60%

Course Evaluation:

Students will be provided a link at the end of the semester to access the course evaluation.

Academic Misconduct / Plagiarism / AI:

Academic Misconduct, including plagiarism (using other people's ideas/words and not giving them credit thus implying the work is your own original work) or using your own work from a previous course without the express permission of the instructor, is taken very seriously at any learning institution. It is taken very seriously in this class. Please be aware of what behaviors constitute academic misconduct ([See Bulletin, Code of Students Rights, Responsibilities and Conduct Part II. A.](#)) If caught cheating or plagiarizing, a student may receive no credit on the assignment and may result in an F for the course. Any instances of academic dishonesty will be reported to the Office of Student Conduct and Care and your Department Chair and may result in expulsion from the University. Additional potential consequences can be found under: potential consequences (See Bulletin, [Code of Students Rights, Responsibilities and Conduct, Part III. A.](#): i.e., failure of the assignment, failure of the course and/or dismissal from the university) of such behavior.

The use of Artificial Intelligence (AI) for any homework or test is prohibited and will be treated the same as academic dishonesty.

Student Support Services

Purdue University Fort Wayne is committed to your academic and personal success. Visit the [Student Support Services](#) page for a list of student support services, including academic services, technology services, health and wellness, and support from administrative offices. For help with technology, including Brightspace, visit the [IT Services Student Technology Support](#) page.

If you observe and/or are made aware of student behavior that leaves you feeling concerned, worried, and/or alarmed, trust your instincts and say something. The CARE Team can assist with the student of concern, whether that's you or someone you are referring. Report the concern through the online CARE referral form. Please note that this form is not for emergencies. If you know of a student who is injured, is injuring themselves or others, or is threatening injuries to themselves or others, please call 911 immediately.

Your emotional wellness and mental health are important. If you have a mental health disorder, are struggling with your mental health, your stress overwhelms your ability to cope with it, or you find yourself needing emotional support, please talk to someone. If you or someone you know is in a mental health crisis situation, call 911 or go to the local emergency room. Otherwise, please reach out to our Center for Student Counseling (CSC). All currently enrolled PFW and IUFW students have access to free counseling at the center. To make an appointment to talk with a counselor call 260-481-6200 or email csc@pfw.edu.

Tentative Course Schedule

- **Unit 1: Personal Finance (5 weeks)**
 - **Chapter 8**
 - **8.1** Percent, Sales Tax, and Discounts
 - **8.3** Simple Interest
 - **8.4** Compound Interest
 - **8.5** Annuities, Methods of Saving, and Investments
 - **8.6** Cars
 - **8.7** The Cost of Home Ownership
 - **8.8** Credit Cards
 - Student Loans
- **Unit 2: Graph Theory (2.5 weeks)**
 - **Chapter 14**
 - **14.1** Graphs, Paths, and Circuits
 - **14.2** Euler Paths and Euler Circuits
 - **14.3** Hamilton Paths and Hamilton Circuits
 - **14.4** Trees

- **Unit 3: Counting Methods and Probability Theory (4 weeks)**
 - **Chapter 11**
 - 11.1 The Fundamental Counting Principle
 - 11.2 Permutations
 - 11.3 Combinations
 - 11.4 Fundamentals of Probability
 - 11.5 Probability with the Fundamental Counting Principle, Permutations, and Combinations
 - 11.6 Events involving “Not”, “Or”; Odds
 - 11.7 Events involving “And”; Conditional Probability
 - 11.8 Expected Value
- **Unit 4: Statistics (4 weeks)**
 - **Chapter 12**
 - 12.1 Sampling, Frequency Distributions, and Graphs
 - 12.2 Measures of Central Tendency
 - 12.3 Measures of Dispersion
 - 12.4 The Normal Distribution
 - 12.5 Problem Solving with the Normal Distribution
 - 12.6 Scatterplots, Correlation, and Regression Lines
- **Unit 5: Measurement (2 weeks)**
 - **Chapter 9**
 - 9.1 Measuring Length; The Metric System
 - 9.2 Measuring Area and Volume
 - 9.3 Measuring Weight and Temperature

**Additional Topics may be added if time allows, units may not be presented in this order

Additional Information:

If you find yourself needing help, I am available after school most days and during CORE. Please reach out if you have any questions at all!