Spring Semester 2020
67-105 Quantitative Reasoning
Section 091 online

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Office Hours: 10:20-11:20 MWF

Prerequisite 67-101 with a grade of C or better or placement

Required Textbook and Materials:

1. These are available in the bookstore. The book can be purchased bundled with the access code or each can be bought separately.
   - *Using & Understanding Mathematics: A Quantitative Reasoning Approach* seventh edition by Bennett and Briggs. You also have the option of using the e-book that comes with the purchase of MyMathLab then you don't need to buy the textbook.
   - Student Access Kit for MyMathLab (**required**). Access can also be purchased online.
2. At least a basic scientific calculator, such as the TI-30Xa.

Course Description: This course is intended to develop analytic reasoning and the ability to solve quantitative problems. Topics to be covered include construction and interpretation of graphs, functional relationships, descriptive statistics, geometry and spatial visualization, math of finance, exponential growth, and basic probability. Appropriate use of units and dimensions, estimates, mathematical notation and available technology will be emphasized throughout the course.

Learning Objectives: Upon successful completion of this course, the student will be able to:

- Identify appropriate models to fit scenarios described with numerical data and/or verbal descriptions, predict outcomes, and draw conclusions in real-world contexts using a model, and explain the limitations of mathematical models in those contexts.
- Interpret and construct expressions and equations in various contexts.
- Create and evaluate arguments supported by quantitative evidence while clearly communicating those arguments using words, tables, graphs, mathematical equations, etc., as appropriate.
- Compare and contrast linear and exponential models in practical problems.
- Construct and interpret graphical displays of data and describe how they can be used and misused.
- Select measures and techniques from descriptive statistics and probability in decision-making contexts.

MyMathLab: You will be doing homework problems, quizzes, and tests on MyMathLab, http://www.pearsonmylabandmastering.com, which is an interactive website where you will work on math problems and receive stop-by-step help to solve problems. This online program provides resources to aid the student learning with videos, multiple examples, and multimedia textbook. There is more information online in Canvas in the MyMathLab section, how to login, and getting started. MyMathLab is tied to the problems in your textbook.

Homework: Your homework problems will be completed on MyMathLab. The homework problems will be similar to problems from your textbook. Each week you will get new homework assignments that will usually be due by the end of the week on Sunday (the last week assignments are due on Friday). These problems can be worked on until you get them all correct with no time limit. Please pay attention to the due dates for the homework assignments. Homework assignments will due by 11:59 on the due date.

Quizzes: There will also be assigned quizzes at the end of each chapter on MyMathLab. You will get 90 minutes to take a quiz and can only take it one time. The quizzes will be due by the end of the week on Sunday. For your quizzes you can use all your notes, textbook, and calculator. Please pay attention to the due dates for the quizzes. Quizzes will due by 11:59 on the due date.

Tests: There will be 2 proctored tests given through MyMathLab. You will be taking your tests with the proctor. Proctored tests are administered by approved testing centers or test proctors. The most common place to take the tests will be at a testing center at a university or technical college. You are responsible for identifying a test proctor, and you must do this within the first week of class. Use the Proctor Approval Form provided in the Tests and Proctors section in Canvas. This form will need to be filled out and submitted to your instructor in the Assignment section in Canvas. If you are using the UWO Testing Center you don't need to fill out the Proctor Form. You just need to let your instructor know. The instructor will then provide the proctor with the passwords for the tests. There will be no make-up tests given except under special circumstances and prior notice. You will have **two hours** for each test. For your tests you can use all your notes, textbook, and calculator. Tests will due by 11:59 on the due date.

Test Schedule

Test 1 Week 7 Oct. 16-22 Chapters 2-6
Test 2 Week 14 May 11-15 Chapters 7-10

Grading: Grading will be based on tests, quizzes and homework weighted as shown below.

Course Component	Weighting
Tests	50 %
Homework	25%
Quizzes	25%

The following scale will be used to calculate your grade.

Scale:	
93-100%	A
90- 92	A-
87- 89	B+
83- 86	B
80- 82	B-
77- 79	C+
70- 76	C
67- 69	D+
63- 66	D
60- 62	D-
Below 60	F

Academic Integrity Policy: Integrity is one of the Core Values of UW Oshkosh. All students share with the faculty the responsibility for academic honesty and integrity. The University expects its students to do their own academic work. In addition, it expects active participation and equitable contributions of students involved in group assignments. The following acts of academic dishonesty are not acceptable:

- Cheating: using or attempting to use unauthorized materials, information, or study aids in any academic exercise (e.g. an exam).
- Facilitating Academic Dishonesty: helping or attempting to help another to commit academic dishonesty (e.g. allowing another to copy from your test or use your work).
- Plagiarism: representing the words or ideas of another as one's own in any academic exercise (e.g. failing to cite references appropriately or taking verbatim from another source), whether it is done with the intention of being dishonest or not.
- Fabrication: unauthorized falsification or invention of any information or citation in an academic exercise (e.g. a paper reference).

Cheating on an exam, plagiarizing or any other form of academic dishonesty will be dealt with in accordance with the current UWO Student Discipline Code. The instructor reserves the right to assign a grade of "F" for the course should circumstances warrant.

The last day to drop without Late Drop Form is Wednesday March 18.

Course Outline:

Chapter 2: Approaches to Problem Solving
- Unit 2A: Understand, Solve, and Explain
- Unit 2B: Extending Unit Analysis

Chapter 3: Numbers in the Real World
- Unit 3A: Uses and Abuses of Percentages
- Unit 3B: Putting Numbers in Perspective
- Unit 3D: Index Numbers: The CPI and Beyond
- Unit 3E: How Numbers Can Deceive: Polygraphs, Mammograms, and More

Chapter 4: Managing Money
- Unit 4B: The Power of Compounding
- Unit 4C: Savings Plans and Investments
- Unit 4D: Load Payments, Credit Cards, and Mortgages

Chapter 5: Statistical Reasoning
- Unit 5A: Fundamentals of Statistics
- Unit 5B: Should You Believe a Statistical Study
- Unit 5C: Statistical Tables and Graphs

Chapter 6: Putting Statistics to Work
- Unit 6A: Characterizing Data
- Unit 6B: Measures of Variation
- Unit 6C: The Normal Distribution

Test 1 (Proctored): Week 7 Mar. 16-22 Chapters 2 - 6

Chapter 7: Probability: Living With the Odds
- Unit 7A: Fundamentals of Probability
- Unit 7B: Combining Probabilities
- Unit 7C: The Law of Large Numbers
- Unit 7E: Counting and Probability

Chapter 8: Exponential Astonishment
- Unit 8A: Growth: Linear vs. Exponential
- Unit 8B: Doubling Time and Half-Life

Chapter 9: Modeling Our World
- Unit 9A: Functions: The Building Blocks of Mathematical Models
- Unit 9B: Linear Modeling
- Unit 9C: Exponential Modeling

Chapter 10: Modeling With Geometry
- Unit 10A: Fundamentals of Geometry
- Unit 10B: Problem Solving With Geometry

Test 2 (Proctored): Week 14 May 11-15 Chapters 7 – 10

Homework, Quiz, and Test Schedule

Work on these homework problems and quizzes during the week. They will be due at the end of each week in MyMathLab. All the due dates are in MyMathLab.

		Homework and Quizzes
Week 1	**Feb. 3 - 9**	Units 2A, 2B, Chap 2 Quiz
Week 2	**Feb. 10 - 16**	Units 3A, 3B, 3D, 3E
Week 3	**Feb. 17 - 23**	Units 4B, 4C, Chap 3 Quiz
Week 4	**Feb. 24 - Mar. 1**	Units 4D, 5A, 5B, Chap 4 Quiz
Week 5	**Mar. 2 - 8**	Units 5C, 6A, Chap 5 Quiz
Week 6	**Mar. 9 - 15**	Units 6B, 6C, Chap 6 Quiz
Week 7	**Mar. 16 - 22**	**Test 1**
Week 8	**Mar. 30 - Apr. 5**	Units 7A, 7B, 7C
Week 9	**Apr. 6 - 12**	Units 7E, 8A, Chap 7 Quiz
Week 10	**Apr. 13 - 19**	Units 8B. 9A, Chap 8 Quiz
Week 11	**Apr. 20 - 26**	Units 9B, 9C,
Week 12	**Apr. 27 - May 3**	Unit 10A, Chap 9 Quiz
Week 13	**May 4 - 10**	Unit 10B, Chap 10 Quiz
Week 14	**May 11 - 15**	**Test 2**