

MTH 2140 Mathematics and Quantitative Reasoning
SYLLABUS

Textbook: *Using & Understanding Mathematics: A Quantitative Reasoning Approach*, 5th edition, by Bennett, Jeffrey and Briggs, William, Pearson/Addison-Wesley, 2011. This will be supplemented by additional readings.

This is one variation of the syllabus; some topics may be changed at the discretion of the instructor.

Blackboard: Class notes, homework assignments, additional problems, readings, and review sheets will be posted on Blackboard.

Calculator: You will need a scientific or graphing calculator with an exponentiation key. Use of cell phones as calculators on tests will not be permitted.

Thinking Critically

1. 1A Recognizing Fallacies
2. 1B Propositions and Truth Values
3. 1E Critical Thinking in Everyday Life

Problem Solving

4. 2A Units
5. 2B Standardized Units
6. 2C Problem-Solving Guidelines

Symmetry

7. 1B Symmetry
8. Rigid Motions and Symmetries (additional reading: Symmetry Types)
9. Border Patterns (additional reading: Border Patterns)

Numbers in the Real World

10. 3A Percentages
11. 3B Scientific Notation
12. 3C Dealing with Uncertainty
13. 3D Index Number

Financial Management

14. 4B Compounding
15. 4C Savings Plans and Investments
16. 4D Loan Payments

Exponential Growth

17. 8A Linear and Exponential Growth
18. 8B Doubling Time and Half Life
19. 8C Population Growth

Statistics

20. 5A Fundamentals of Statistics
21. 5B Should You Believe a Statistical Study?
22. 5D Graphics in the Media

LEARNING GOALS OF COURSE: Upon completion of this course, students will be able to:

- Translate and solve problems expressed in natural language (i.e. word problems) into a mathematics context using symbolic expressions, graphical methods or technology.
- Use valid deductive reasoning either within a mathematical context or in mathematical applications to real world situations.
- Apply mathematics in a real world context appropriate to the level of the course.
- Communicate effectively the solution of a mathematics problem in written and/or oral form using appropriate media.
- Check solutions to problems through a variety of means, including informed estimation.