

## Master Syllabus

### 1. Course Information

**College:** College of Science and Mathematics

**Department:** Mathematics and Statistics

**Course Title:** Mathematics and the Modern World

**Course Designation and Number:** MTH 145

**GE Area(s):**

I: Communication and Mathematical Skills

**Writing Intensive:**  Yes  No

**For WI Courses:**  All sections  Selected Sections are WI.

**Method(s) of Instruction:**  Lecture

Discussion

Web-enhanced

Web-only (At least one section)

Other

Small group activities

One section is a distance-learning, on-line section

**Includes Lab:**  Yes  No

**Prerequisites:** Dev 095 or Level three on Math Placement Test

### 2. Objectives

#### **GE Program Objectives:**

...to develop skills and knowledge that will form the basis for lifelong learning.

...sharpen critical thinking, problem solving and communication skills.

#### **GE Area One Objectives:**

d. use, formulate and interpret mathematical models

e. summarize and justify analyses of mathematical models or problems using appropriate words, symbols, tables and/or graphs

#### **Course Objectives and GE Learning Outcomes:**

Mathematics and the Modern World presents applications of mathematical models to real world problems. The primary focus is on applying algorithms, interpreting results, and summarizing analyses of a variety of problems. Topics covered include financial management and statistical reasoning.

Area One learning outcomes addressed:

Sharpens critical thinking, problem solving and communication skills

Uses, formulates and interprets mathematical models

Summarizes and justifies analyses of mathematical models or problems using appropriate words, symbols, tables and/or graphs

### 3. Suggested Course Materials

**Text:** *Using and Understanding Mathematics, A Quantitative Reasoning Approach*, by Jeffrey Bennett & William Briggs

Scientific calculator required, graphing calculator recommended

### 4. Suggested Methods of Evaluation

Three tests and the collection of homework and/or quizzes are recommended.

A cumulative final exam is required.

## **5. Grading Policy**

All GE courses are graded A-F.

## **6. Suggested Weekly Course Outline Including Typical Assignments**

- Wk 1: Review of selected mathematical topics. Handout to be provided by the Math dept. Topics include order of operations, exponents and radicals, simplifying expressions, and solving equations.
- Wk 2: Financial Management, section 4A. The Power of Compound Interest  
Exercises: 3,4,8,9,11-15,21,22,26,32,33,41
- Wk 3: Financial Management, section 4B. Savings Plans.  
Exercises: 6,7,10,11,15,16,21,22. Review and Test 1.
- Wk 4: Financial Management, section 4C. Loan Payments, Credit Cards, and Mortgages. Exercises: 1,3-5,10,15,17,18,23,29,33
- Wk 5: Continue with 4C.
- Wk 6: Fundamentals of Statistics, section 5A.  
Exercises: 1,2,6,13,14,37-40,41-46
- Wk 7: Review and Test 2. Begin Statistical Studies, section 5B  
Exercises: 1-9,11-14,17,18
- Wk 8: Statistical Tables and Graphs, section 5C  
Exercises: 11-14,20,22
- Wk 9: Characterizing a Data Distribution, section 6A.  
Exercises: 2,3,6-12,13-16,18
- Wk 10: Measures of Variation and the Normal Distribution-selected topics  
Sections 6B and 6C. Exercises: 3,4,6,7 from 6B and 1-14 from 6C  
Review and Test 3

## **7. Other**

Syllabus distributed to students should employ the format approved by UCAPC and must include:

- Instructor name, office hours, and contact information
- Office of Disability Services information
- Information on how grades will be determined
- Attendance policy