# Math 1483 - Functions and Modeling
# Summer 2022 - Schedule

updated May 24, 2022 at 13:48

Note: A list of learning objectives and general education outcomes can be found at the bottom of this document.

| # | Assignment | Due Date | Points | Week | Learning Objectives | Gen. Ed. Outcomes |
|---|---|---|---|---|---|---|
| 1 | Week 1 Discussion Board | 2022.06.12 | 30 | 1 | 1, 5 | 2 |
| 2 | Prologue: Calculator Arithmetic | 2022.06.12 | 100 | 1 | 1 | 1 |
| 3 | Cumulative Quiz #1 | 2022.06.12 | 100 | 1 | 1 | 1 |
| 4 | Section 1.1: Functions Given by Formulas | 2022.06.19 | 100 | 2 | 1, 5 | 1, 3 |
| 5 | Section 1.2: Functions Given by Tables | 2022.06.19 | 100 | 2 | 1, 3 | 1, 3 |
| 6 | Section 1.3: Functions Given by Graphs | 2022.06.19 | 100 | 2 | 1, 3 | 1, 2 |
| 7 | Week 2 Discussion Board | 2022.06.19 | 30 | 2 | 1, 5 | 2 |
| 8 | Cumulative Quiz #2 | 2022.06.19 | 100 | 2 | 1, 3, 5 | 1, 2, 3 |
| 9 | Section 1.4: Functions Given by Words | 2022.06.26 | 100 | 3 | 1, 5 | 3 |
| 10 | Section 2.1: Tables and Trends | 2022.06.26 | 100 | 3 | 1, 5 | 1, 2 |
| 11 | Section 2.2: Graphs | 2022.06.26 | 100 | 3 | 1, 3, 5 | 1, 3 |
| 12 | Week 3 Discussion Board | 2022.06.26 | 30 | 3 | 1, 3 | 1, 3 |
| 13 | Cumulative Quiz #3 | 2022.06.26 | 100 | 3 | 1, 3, 5 | 1, 2, 3 |
| 14 | Section 2.3: Solving Linear Equations | 2022.07.03 | 100 | 4 | 1, 2, 3, 5 | 1, 3 |
| 15 | Section 2.4: Solving Nonlinear Equations | 2022.07.03 | 100 | 4 | 1, 2, 3, 5 | 1, 3 |
| 16 | Section 2.5: Inequalities | 2022.07.03 | 100 | 4 | 1, 2, 5 | 1, 3 |
| 17 | Week 4 Discussion Board | 2022.07.03 | 30 | 4 | 1, 5 | 1, 2 |
| 18 | Section 2.6: Optimization | 2022.07.10 | 100 | 5 | 1, 3, 5 | 1, 2, 3 |
| 19 | Section 3.1: The Geometry of Lines | 2022.07.10 | 100 | 5 | 1, 2, 3, 5 | 1, 2, 3 |
| 20 | Section 3.2: Linear Functions | 2022.07.10 | 100 | 5 | 1, 2, 3, 5 | 1, 2, 3 |
| 21 | Research Paper Topic Selection | 2022.07.10 | 10 | 5 | | |
| 22 | Week 8 Discussion Board | 2022.07.10 | 30 | 5 | | |
| 23 | Cumulative Quiz #4 | 2022.07.10 | 100 | 5 | 1, 2, 3, 5 | 1, 2, 3 |
| 24 | Section 3.3: Modeling Data with Linear Functions | 2022.07.17 | 100 | 6 | 1, 2, 4, 5 | 1, 2, 3 |
| 25 | Section 3.4: Linear Regression | 2022.07.17 | 100 | 6 | 1, 2, 3, 4, 5 | 1, 2, 3 |
| 26 | Section 3.5: Systems of Equations | 2022.07.17 | 100 | 6 | 1, 2, 3, 5 | 1, 2, 3 |
| 27 | Week 6 Discussion Board | 2022.07.17 | 30 | 6 | 1, 3, 5 | 1, 2, 3 |
| 28 | Section 5.5: Quadratic Functions | 2022.07.24 | 100 | 7 | 1, 2, 3, 4, 5 | 1, 2, 3 |

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| 29 | Section 4.1: Exponential Growth and Decay | 2022.07.24 | 100 | 7 | 1, 2, 3, 5 | 1, 2, 3 |
| 30 | Section 4.3: Modeling Exponential Data | 2022.07.24 | 100 | 7 | 1, 2, 3, 4, 5 | 1, 2, 3 |
| 31 | Week 7 Discussion Board | 2022.07.24 | 30 | 7 | | |
| 32 | Section 4.4: Modeling Nearly Exponential Data | 2022.07.31 | 100 | 8 | 1, 2, 3, 4, 5 | 1, 2, 3 |
| 33 | Cumulative Quiz #5 | 2022.07.31 | 100 | 8 | 1, 2, 3, 4, 5 | 1, 2, 3 |
| 34 | Research Paper Due | 2022.07.31 | 90 | 8 | 1, 2, 3, 4, 5 | 1, 2, 3 |
| 35 | Cumulative Quiz #5 | 2022.07.31 | 100 | 8 | 1, 2, 3, 4, 5 | 1, 2, 3 |
| 36 | Research Paper Due | 2022.07.31 | 90 | 8 | 1, 2, 3, 4, 5 | 1, 2, 3 |

**Learning Objectives**

The following objectives will be met in this class:

(1) Interpret functions using real-world contexts by translating across multiple representations, including symbols, tables, graphs, and words.
(2) Identify and analyze families of functions, including linear, polynomial, rational, exponential, and logarithmic functions.
(3) Determine key characteristics of functions, including global properties and local patterns of change, and interpret their meanings in context, including asymptotes, concavity, end behavior, extrema, increasing/decreasing intervals, and turning points.
(4) Combine and modify existing functions to create new functions, including composition of functions, cost, revenue, and profit functions, transformation of functions, and regression analysis.
(5) Apply algebraic techniques and digital resources to create, analyze, and interpret appropriate models (either functions or systems of equations) of real-life phenomena.

**General Education Outcomes**

As a general education course, this course contributes to the critical thinking and the mathematical or quantitative reasoning components of the general education program at Southeastern. The goal of the critical thinking component is to enhance the ability of students to integrate new information with previously acquired information to solve novel complex problems. To address the critical thinking goal, students will solve problems described verbally, graphically, symbolically or numerically. The goal of the mathematical or quantitative reasoning component is to develop the ability of students to understand and apply mathematical abstraction. To address the mathematical or quantitative reasoning goal, students will:

(1) Solve problems using the principles of algebra and statistics.
(2) Apply mathematical reasoning and technology to analyze and interpret quantitative information.
(3) Use and interpret mathematical formulas.