

Financial Mathematics, Semester B

Course Overview

Financial Mathematics, Semester B, is a single-semester course designed to provide insight into some advanced concepts of financial algebra. In this course, you'll see how businesses achieve profits through proper financial planning. You'll examine the benefits and consequences of using credit cards and taking out loans. You'll also describe the procedures for filing taxes and identify taxes levied on various investments.

Course Goals

By the end of this course, you will be able to do the following:

- Explain how a business is structured to manage costs and to earn revenue.
- Determine how a business can balance costs and revenue to maximize its profit.
- Use matrices to analyze income and expenses.
- Explain why people choose different amounts of insurance coverage.
- Discuss credit terms, and compare various credit offers.
- Describe consumer use of credit cards, including benefits, consequences, and credit protection laws.
- Understand the key features of different types of mortgages and calculate the costs involved in a mortgage.
- Discuss how income taxes are imposed and how spending affects income taxes.
- Discuss the different methods and forms used for filing taxes.
- Compare federal, state, and local tax rates on various investments.

Math Skills

Before beginning this course, you should be able to do the following:

- Solve problems involving arithmetic operations with real numbers.
- Know the properties of expressions and equations, and use those properties to solve problems.
- Collect, analyze, and display data to solve problems.

General Skills

To participate in this course, you should be able to do the following:

- Understand the basics of spreadsheet software, such as Microsoft Excel or Google Spreadsheets, but having prior computing experience is not necessary.
- Communicate through email and participate in discussion boards.

For a complete list of general skills that are required for participation in online courses, refer to the Prerequisites section of the Student Orientation document, found at the beginning of this course.

Credit Value

Financial Mathematics, Semester B, is a 0.5-credit course.

Course Materials

- notebook
- computer with internet connection and speakers or headphones
- Microsoft Excel or equivalent
- graphing calculator (required for the lesson *Balancing Income and Expenses*)

Course Pacing Guide

This course description and pacing guide is intended to help you keep on schedule with your work. Note that your course instructor may modify the schedule to meet the specific needs of your class.

Unit 1: Earning and Protecting Money

Summary

In this unit, you'll analyze mathematical business models and profitability models. You'll interpret graphs to determine the point of maximum profit. You'll also use matrices to solve problems and track income and expenses. Then you'll analyze various types of insurances such as life insurance, disability insurance, health insurance, and so on. At the end of the unit, you'll evaluate the need for insurance and determine appropriate insurance coverage.

Day	Activity/Objective	Type
1 day: 1	Syllabus and Student Orientation <i>Review the Student Orientation and Course Syllabus at the beginning of this course.</i>	Course Orientation
5 days: 2–6	Modeling a Business <i>Explain how a business is structured to manage costs and earn revenue.</i>	Lesson
6 days: 7–12	Maximizing Profit <i>Determine how a business can balance costs and revenue to maximize its profit.</i>	Lesson
6 days: 13–18	Balancing Income and Expenses <i>Use matrices to analyze income and expenses.</i>	Lesson
5 days: 19–23	Types of Insurance <i>Compare the purposes of various types of insurance.</i>	Lesson
5 days: 24–28	Insurance and Risk <i>Explain why people choose different amounts of insurance coverage.</i>	Lesson
4 days: 29–32	Unit Activity and Discussion—Unit 1	Unit Activity/ Discussion
1 day: 33	Posttest—Unit 1	Assessment

Unit 2: Using Consumer Credit

Summary

In this unit, you'll examine the types of credit and factors that contribute to a good credit score. You'll describe how consumer protection laws protect the rights of credit card users. Next, you'll analyze the various components of loans and use an amortization table. Finally, you'll learn about the various types of mortgages and the factors that qualify an individual to obtain a mortgage loan.

Day	Activity/Objective	Type
5 days: 34–38	Introduction to Consumer Credit <i>Discuss credit terms and the ways that consumers compare various credit offers.</i>	Lesson
6 days: 39–44	Credit Cards <i>Describe consumer use of credit cards, including benefits, consequences, and credit protection laws.</i>	Lesson
6 days: 45–50	Loans <i>Discuss the benefits of making a down payment on a loan and the consequences of failing to repay a loan.</i>	Lesson
5 days: 51–55	Mortgages <i>Understand the key features of different types of mortgages, and calculate the costs involved in a mortgage.</i>	Lesson
4 days: 56–59	Unit Activity and Discussion—Unit 2	Unit Activity/ Discussion
1 day: 60	Posttest—Unit 2	Assessment

Unit 3: Understanding Taxes

Summary

In this unit, you'll identify the various taxes you may pay and analyze your responsibilities as a taxpayer. You'll describe the components of income tax and list some common tax credits. Then you'll examine the procedure for filing income tax returns. Finally, you'll compare the taxes on various types of investments such as stocks and bonds.

Day	Activity/Objective	Type
6 days: 61–66	Methods of Taxation <i>Explain how and why taxes are paid to federal, state, and local governments.</i>	Lesson
6 days: 67–72	Income Taxes <i>Discuss how income taxes are imposed and how spending affects income taxes.</i>	Lesson
6 days: 73–78	Filing Taxes <i>Discuss the different methods and forms used for filing taxes.</i>	Lesson
5 days: 79–83	Taxes on Investments <i>Compare federal, state, and local tax rates on various investments.</i>	Lesson
4 days: 84–87	Unit Activity and Discussion—Unit 3	Unit Activity/ Discussion
1 day: 88	Posttest—Unit 3	Assessment
1 day: 89	Semester Review	
1 day: 90	End-of-Semester Exam	Assessment