

**Math 206**  
**Mathematics of Finance**

**THIS SYLLABUS IS FOR THE NINTH EDITION OF THE TEXT.**

**Text:** *Mathematics for Business*, 9th edition, Salzman, Miller, Clendenen, Pearson Addison Wesley, 2011

**Prerequisites:** Credit for Math 105 or Math 100.

**Special Notes:** A TI83, TI83+, TI84, TI-84+, or a calculator with a TVM Solver is required. Unless you are told to do otherwise, you should use mathematical formulas rather than the tables in the text to work the problems.

**Course Objectives:** Upon completion of this course, the student will be able to:

- determine gross earnings for wages, salaries, commissions and piecework including regular time pay, overtime pay and chargebacks,
- determine net pay by deducting FICA tax, Medicare tax, state disability insurance and various other payroll deductions, including state and federal withholding taxes,
- determine property tax by finding the assessed valuation of property based on the fair market value and then applying various different kinds of assessment rates,
- calculate motor vehicle insurance premiums involving different variants,
- determine the amounts of money paid by an insurance company and the amount for which a driver is liable in the event of an accident involving property damage and/or personal injuries,
- calculate interest, rate, principal, maturity value, present value and time for simple interest and compound interest,
- find the due date, face value, time and rate of a simple interest note,
- find bank discount, proceeds, face value, discount rate and time for simple discount notes,
- convert between simple interest and simple discount rates,
- calculate the proceeds of a rediscounted note,
- determine the amount of an annuity, the amount of an annuity payment, and the number of payments for both an ordinary annuity and an annuity due,
- calculate the present value of an annuity and the equivalent cash price,
- determine the amount of a sinking fund payment and set up a sinking fund table,
- calculate average daily balance, finance charges, and ending balance for open-end credit,
- determine installment cost, and finance charges for installment loans and find the APR,
- apply the United States Rule and the Rule of 78 when prepaying a loan,
- use the formula for amortization to find the payment on personal property loans,
- set up an amortization table and find the monthly payment due,
- determine monthly payments on a home and prepare a payment schedule,
- find the mean and the weighted mean for a set of data and for grouped data,
- find the median and mode of a set of data and for data in a frequency table,
- determine the range and standard deviation for a set of data, and
- estimate data by using the normal curve.

| Lesson | Section and Topic  | Assignment   |
|--------|--|--|
| 1      | 6.1 Gross earnings (Wages and Salaries)<br>6.2 Gross earnings (Commission)<br>6.3 Gross Earnings (Piecework)   | 5, 10, 21, 29, 49-50, 52-56, 60<br>11, 14, 15, 27-30, 32<br>14, 15, 21, 29, 35-40  |
| 2      | 6.4 Social Security, Medicare, and Other Taxes<br>6.5 Income Tax Withholding<br>7.2 Property Tax               | 5, 13, 19, 23-27, 31<br>7, 9, 15, 23, 29, 35, 37, 38, 39, 40<br>3, 11, 13, 15, 17, 18, 21-24, 27-29, 34-37, 39-46  |
| 3      | 7.3 Personal Income Tax<br>8.2 Motor Vehicle Insurance<br>Review   | 3, 9, 10, 11, 13, 19-22, 28, 29, 31-34<br>13, 14, 19-26<br>Chapter 6 Review: 3, 9, 13-21, 23, 27, 28, 32, 34<br>Chapter 7 Review: 13-21, 23-27, 29, 31-34 Chapter 8 Review: 28, 29 |
| 4      | TEST 1<br>12.1 Basics of Simple Interest<br>12.2 Simple Interest for a Given Number of Days                    | Sections: 6.1-6.5, 7.2, 7.3, 8.2<br>3, 6, 7, 19, 21, 24, 25, 27-31, 33, 35, 37, 39, 40<br>1, 4, 6, 7, 11, 15, 19, 27, 31-32, 34-36, 38, 43-46                                      |
| 5      | 12.3 Maturity Value<br>12.4 Inflation and the Time Value of Money<br>13.1 Simple Interest Notes                | 3, 4, 11, 17, 19, 21-23, 25-28<br>5, 11, 13, 15-18, 21-24, 28<br>11, 15, 19, 31-34, 36-44  |
| 6      | 13.2 Simple Discount Notes<br>13.3 Comparing Simple Interest and Simple Discount<br>13.4 Discounting a Note    | 3, 9, 13, 15, 17-19, 22-28, 31-33<br>3, 11, 13-18<br>2, 7, 11, 13, 15, 16, 19 -23  |
| 7      | Review<br>TEST 2<br>14.1 Compound Interest   | Chapter 12 Review: 35-44 Chapter 13 Review: 13-28, 31-33, 35-37<br>Sections: 12.1-12.4, 13.1-13.4<br>4, 8, 11, 12, 17-21, 23-27, 29-32, 40, 41                                     |
| 8      | 14.2 Daily and Continuous Compounding<br>14.3 Finding Time and Rate<br>14.4 Present Value at Compound Interest | 3, 6, 11, 19-22, 25, 26, 35, 36, 38<br>3, 4, 7, 8, 11-13, 15, 17, 18, 25-30<br>3, 5, 7, 9-22   |
| 9      | Review<br>TEST 3<br>15.1 Amount of An Annuity  | Chapter 14 Review: 7,8, 10, 31-33, 35-37<br>Sections: 14.1-14.4<br>5, 9, 11, 13, 15, 36, 37, 39-48, 50-56  |
| 10     | 15.2 Present Value of an Annuity<br>15.3 Sinking Funds<br>16.1 Open-End Credit                                 | 7, 9, 10, 11, 13-18, 21-32<br>5-7, 9, 15-24<br>3, 6, 8, 13-16, 19  |
| 11     | 16.2 Installment Loans<br>Review<br>TEST 4   | 4, 6, 9, 10, 15-18, 21<br>Chapter 15 Review: 3, 5, 8, 11, 12, 14, 16, 18-26 Chapter 16 Review: 2, 4, 5, 30, 31<br>Sections: 15.1-15.3, 16.1, 16.2                                  |
| 12     | 16.3 Early Payoffs of Loans<br>16.4 Personal Property Loans<br>16.5 Real Estate Loans                          | 5, 9, 15-24<br>7, 9, 11, 15, 17-19, 21, 22<br>1, 4, 11, 15, 16, 18, 20, 21, 23   |
| 13     | 4.2 The Mean<br>4.3 The Median and the Mode<br>4.4 Range and Standard Deviation                                | 3-5, 7-11, 15, 16, 19, 21, 22, 25-28<br>2, 6, 7, 11, 13, 15-19, 21, 23, 24<br>5, 9, 13, 17, 19-23, 25-28, 37, 38, 41, 43   |
| 14     | Review<br>TEST 5<br>Review for Final   | Chapter 16 Review: 15, 19, 23, 27, 29, 32-34 Chapter 4 Review: 9, 12, 13, 15, 19, 26, 28<br>Sections 16.3-16.5, 4.2-4.4  |

**Emergency Evacuation Procedure:** A map of this floor is posted near the elevator marking the evacuation route and the **Designated Rescue Area**. This is an area where emergency service personnel will go first to look for individuals who need assistance in exiting the building. Students who may need assistance should identify themselves to the teaching faculty.

Last updated 23 August 2010.