Virginia Western Community College
MTH 132
Business Mathematics

Prerequisites

Competency in Math Essentials MTE 1-3 as demonstrated through the placement and diagnostic tests, or by satisfactorily completing the required MTE units or equivalent.

Course Description

Provides instruction, review, and drill in percentage, cash and trade discounts, mark-up, payroll, sales, property and other taxes, simple and compound interest, bank discounts, loans, investments, and annuities.

Semester Credits: Lecture Hours: 3 Lab/Clinical/Internship Hours: 0

Required Materials

Textbook:
Business Math. Cleaves, Hobbs, and Noble. 11th Edition. Pearson. ISBN: 9780134496434

Other Required Materials:
Microsoft Excel

Course Outcomes

At the completion of this course, the student should be able to:

Goal 1: Communication and basic skills	**Solve application problems by interpreting the materials presented, including determining the nature and extent of the information needed, and present the answer in standard English.** **Estimate and consider answers to mathematical problems in order to determine reasonableness.** **Correctly calculate sums, differences, products and quotients of whole numbers, fractions and mixed numbers, and decimal numbers without the use of a calculator.** **Perform basic calculator operations** **Solve a formula for any specified variable.** **Convert decimal numbers and fractions to and from percents.**

Goal 2: Banking applications	• **Solve word problems using the basic percentage formula.** • **Identify the component parts of a check, check stub and deposit slip.** • **Perform simple banking transactions, rectify bank statements.** • **Calculate simple interest, compound interest and simple discount.** • **Use the formulas for maturity value and present value for simple interest loans.** • **Use tables to calculate present value and future value.** • **Find the monthly mortgage payment, interest and PITI and prepare a partial amortization schedule.** • **Calculate sales, property , loans with closed-end credit and open-end credit**
Goal 3: Taxes	• **Calculate Payroll, income taxes.** • **Calculate gross earnings based on salaries, commissions and wages.** • **Calculate overtime earnings for wages, salaries, and commissions.** • **Calculate State withholding taxes.** • **Calculate FICA and Medicare taxes for employees and self-employed individuals.** • **Calculate Federal withholding taxes using the wage bracket and percentage methods.** • **Calculate an employer's Federal Tax Liability.**
Goal 4: Business applications	• **Complete an invoice.** • **Calculate the selling price for an item using markup and markdown.** • **Use the basic percentage formula to calculate trade, chain, quantity and cash discounts, and net cost.** • **Use complements to calculate net cost.** • **Calculate the equivalent single discount for a series discount.** • **Determine the last date of a discount period.** • **Calculate the selling price for an item using markup and markdown.** • **Determine the break-even point and the amount of a profit/loss.**

<u>Topical Description</u>

<u>Chapter 1: Review of Whole Number and Integers</u>
      1.1 Place Value and Our Number System
      1.2 Operations with Whole Numbers and Integers

<u>Chapter 2: Review of Fractions</u>
      2.1 Fractions
      2.2 Adding and Subtracting Fractions
      2.3 Multiplying and Dividing Fractions

<u>Chapter 3: Decimals</u>
      3.1 Decimals and the Place-Value System
      3.2 Operations with Decimals
      3.3 Decimal and Fraction Conversions

<u>Chapter 4: Banking</u>
      4.1 Checking Account Transactions
      4.2 Bank Statements

<u>Chapter 5: Equations</u>
      5.1 Equations
      5.2 Using Equations to Solve Problems
      5.3 Formulas

<u>Chapter 6: Percents</u>
      6.1 Percent Equivalents
      6.2 Solving Percentage Problems
      6.3 Increases and Decreases

<u>Chapter 8: Trade and Cash Discounts</u>
      8.1 Single Trade Discounts
      8.2 Trade Discount Series
      8.3 Cash Discounts and Sales Terms

<u>Chapter 9: Markup and Markdown</u>
      9.1 Markup based on Cost
      9.2 Markup Based on Selling Price and Markup Comparisons
      9.3 Markdown, Series of Markdowns, and Perishables

<u>Chapter 10: Payroll</u>
      10.1 Gross Pay
      10.2 Payroll Deductions
      10.3 The Employer's Payroll Taxes

Chapter 11: Simple Interest and Simple Discount
   11.1 The Simple Interest Formula
   11.2 Ordinary and Exact Interest
   11.3 Promissory Notes

Chapter 12: Consumer Credit
   12.1 Installment Loans and Closed-End Credit
   12.2 Paying a Loan Before It Is Due: The Rule of 78
   12.3 Open End Credit

Chapter 13: Compound Interest, Future Value, and Present Value
   13.1 Compound Interest and Future Value
   13.2 Present Value

Chapter 14: Annuities and Sinking Funds
   14.1 Future Value of an Annuity
   14.2 Sinking Funds and the Present Value of an Annuity

Chapter 16: Mortgages
   16.1 Mortgage Payments
   16.2 Amortization Schedules and Qualifying Ratios

Chapter 20: Taxes
   20.1 Sales Tax and Excise Tax
   20.2 Property Tax
   20.3 Income Taxes

Chapter 21: Financial Statements
   21.1: The Balance Sheet
   21.2: Income Statements
   21.3 Financial Statement Ratios

Notes to Instructors

- **Microsoft Excel should be used when appropriate. MS Excel templates are available as an instructor resource to this text.**