

Quinsigamond Community College
School of Math and Science

Instructor's Information:

Instructor: <Professor John Smith>
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Course Information:

Course: MAT 103 Mathematics for Business – Section ##
Meets on: <Mondays, Wednesdays, Fridays from 8:00am – 8:50am>
Credits: 3 credit hours

Course Description:

This course introduces the mathematical processes and techniques currently used in the field of business and finance. Students use practical examples throughout to illustrate the relevance of analyzing and interpreting data in business and financial management. Students learn sound decision making skills that will aid them in fulfilling their roles as citizens, consumers, employees, employers, investors, and entrepreneurs. The course introduces business statistics and continues with business and financial topics including bank services, business and consumer loans, simple and compound interest, payroll taxes, risk management, the mathematics of buying, break-even and cost-volume-profit analysis, discounts, markups and markdowns, inventory control, stocks and bonds, annuities and sinking funds, depreciation, interpreting financial statements and financial analysis.

Pre-requisite:

MAT 095 with a grade of “C” or higher; or appropriate placement score

Required Textbook/Materials/Website:

Textbook: *Mathematics for Business*, by Salzman and Clendenen, Pearson Publishing, 10th edition, © 2014

Materials: the use of a calculator is highly recommended

Website: Access to www.mymathlab.com

Student Learning Outcomes & Instructional Objectives:

This course is designed to achieve the following student outcomes and objectives:

- Identify and complete the parts of a check.
- Calculate monthly service charges.
- Compare and contrast the difference and the best types of interest bearing accounts.
- Determine the adjusted and current bank balance for a bank statement.
- Calculate the difference methods for finding weekly wages and salaries.
- Find gross earnings with piecework, commissions, and overtime pay.
- Using tables to find, or calculate, the Social Security Tax and Medicare Tax for an employee.
- Determine the amount of withholding taxes based on an employee’s tax bracket.

- Calculate net or take-home pay.
- Complete and use a table to find the net cost equivalent of series discounts.
- Calculate net and cash discounts.
- Determine markup prices and convert to percentages.
- Determine markdown prices and convert to percentages.
- Calculate break-even point and operating profit or loss.
- Valuing inventory using various methods.
- Find simple and compound interest.
- Given a problem with an unknown, determine the principal, rate, or time.
- Explain the individual pieces to a US Treasury Bill.
- Solve problems dealing with discounted notes.
- Define inflation and the role that government plays on inflation.
- Explain and calculate a CD, annuity, stock, and bonds.
- Set up a sinking fund table.
- Calculate various ratios using financial statement.
- Read stocks, bonds, and mutual fund tables.
- Determine the commission charges on stocks, bonds, and mutual funds.
- Discuss and use the various types of credit.
- Use a table to find the APR (Annual Percentage Rate).
- Use and calculate the Rule of 78.
- Find and use an amortization schedule.
- Understand and find your credit score.
- Compare a fixed home loan with a variable home loan.
- Understand and compute property taxes, personal and corporate income taxes, fire, auto, and life insurances.
- List and calculate possible income deductions.
- Calculate depreciation using the various methods.
- Compute accumulated depreciation, book value, and capital gain or capital loss on fixed assets.
- Analyze an income statement and a balance sheet.
- Understand and use different types of graphs.

Teaching Procedures:

Most classes will be a combination of lecture, group activities, and in-class assignments. You will be given homework assignments to be completed outside of class, with due dates/times. There will occasionally be a quiz or exam given in class.

Course Topics & Required Assignments/Readings:

Problem Solving and Operations with Fractions

- Basic Procedure for Solving Problems
- Adding, Subtracting, Multiplying, and Dividing Fractions

Equations and Formulas

- Introduction to Fractions and Mixed Numbers

- Applications for and Solving Equations
- Solving Formulas Using Ratios and Proportions
- Solving Formulas Using Exponents and the Order of Operations

Percent

- Writing Decimals and Fractions as Percents
- Finding the Part, Base, and Rate
- Calculating Increases and Decreases (Changes)

Business Statistics

- Calculating the Mean, Median, and Mode
- Preparing Frequency Distributions and Basic Graphs
- Graphing Equations Using Line Graphs
- Determining the Range and Standard Deviation
- Finding Price Relative (or percent change) and Comparing Cost Using the Consumer Price Index

Banking Services

- Checking Accounts and Check Register
- Checking Services and Credit-Card Transactions
- Reconciliation

Payroll

- Calculate Gross Earnings for Hourly Wages, Salaries, Commissions, and Piecework
- Determining Payroll Taxes for Social Security, Medicare, Income Tax, and Other Related Taxes
- Understanding Payroll Records, Quarterly Returns and Calculate Employer's Payroll Taxes

Taxes

- Find and Calculate the Amount of Sales, Property, and Personal Income Taxes

Risk Management

- Find and Calculate Business, Motor Vehicle, and Life Insurances

Mathematics of Buying

- Invoicing and Trade Discounts, Single Discount Equivalents, and Cash Discounts: Ordinary Dating and Other Dating Methods

Markup

- On Cost, Selling Price, and with Spoilage

Markdown and Inventory Control

- Markdowns
- Average Inventory and Inventory Turnover
- Valuation of Inventory

Simple Interest

- Basics of Simple Interest
- Simple Interest for a Given Number of Days
- Maturity Value
- Inflation and the Time Value of Money

Notes and Bank Discounts

- Simple Interest Notes

- Simple Discount Notes
- Comparing Simple Interest and Simple Discount
- Discounting a Note

Compound Interest

- Compounding Interest Daily and Continuously
- Finding Time and Rate
- Present Value of Compound Interest

Annuities and Sinking Funds

- Amount of an Annuity
- Present Value of an Annuity
- Sinking Funds

Business and Consumer Loans

- Open-End Credit
- Installment, Personal Property, and Real Estate Loans
- Early Payoffs of Loans

Depreciation

- Straight-Line, Declining-Balance, Sum-of-the-Years'-Digits, and Unit-of-Production Methods
- Modified Accelerated Cost Recovery System

Financial Statements and Ratios

- Income Statement and Income Statement Analysis
- Balance Sheet and Balance Sheet Analysis
- Financial Ratios

Distribution of Profits, Stocks, and Bonds

- Distribution of Profits and Losses in a Partnership
- Distribution of Profits in a Corporation
- Buying Stock
- Bonds
- Overhead Distribution

Assignment & Test Schedule:

<list all assignments, quizzes, & exam dates>

Grading Breakdown:

<25% Homework >

<15% Quizzes>

<10% Attendance>

<20% Exams>

<30% Final Exam>

A	95 – 100	B –	80 – 82	D +	67 – 69
A –	90 – 94	C +	77 – 79	D	63 – 66
B +	87 – 89	C	73 – 76	D –	60 – 62
B	83 – 86	C –	70 – 72	F	0 – 59

Attendance Policy:

Students are expected to attend all classes, for the entire period. Attendance will be taken during every class, and counts towards your final course grade. If you are absent from class, a doctor's note will excuse your absence.

Disability Statement:

If you have a disability which may require an accommodation, please notify me as soon as possible. You are responsible for forwarding your Accommodation Letter to me and discussing arrangements for this course. Your accommodations for this course begin upon my receipt of your Accommodation Letter; accommodations are not retroactive. You may request accommodations at any time during the semester, but instructors must be provided with reasonable notice prior to exams or deadlines.

Disability Services works to promote access to ensure an accessible college experience for students. If you have further questions, contact Disability Services. All discussions are confidential.

Contact Information for Disability Services & Assistive Technology:

Call: 508-854-4471

Sorenson Video Phone: 508-502-7647

Email: disabilityservices@qcc.mass.edu

Services for Veterans:

If you are a veteran of the armed forces, please visit the Veteran Affairs Office located in 258A (Administration Building) or contact them at veteranaffairs@qcc.mass.edu

Academic Honesty and Plagiarism:

Our purpose in the classroom is to seek the truth; this work requires trust and honesty between teacher and student. If we are not honest about what we know and don't know, our learning will always be impaired. Because our teaching and learning depends on this honest communication, we expect all students to understand what plagiarism is and why it is unacceptable.

Plagiarism means taking someone else's ideas or words and presenting them as one's own. The offense can take many forms including cheating on a test, passing in a paper taken from the Internet or from another student, or failing to properly use and credit sources in an essay. Sometimes the issue is subtle, involving getting too much help on an assignment from someone else. In every instance, plagiarism means cheating both oneself and the owner of the source. Since the cheating sabotages a student's learning experience, consequences range from no credit for the assignment to failure for the course and possible expulsion from the college.

For further information concerning plagiarism, refer to the QCC Student Handbook.