##### BARTON COMMUNITY COLLEGE

**COURSE SYLLABUS**

### GENERAL COURSE INFORMATION

Course Number: MATH 1819

Course Title: Business Mathematics

Credit Hours: 3

Prerequisite: MATH 1809 Basic Applied Mathematics with a grade of C or better OR having

passed Module 4 in College Preparatory Mathematics OR appropriate placement

core.  
Division/Discipline: Academic Division/Mathematics  
Course Description: This course deals with fundamental mathematic concepts useful for business decision-making. Students will learn the mathematics involved in discounts, markups and markdowns, banking, simple and compound interest, annuities, payroll, inventory and depreciation.

### INSTRUCTOR INFORMATION

### COLLEGE POLICIES

# Students and faculty of Barton Community College constitute a special community engaged in the process of education. The College assumes that its students and faculty will demonstrate a code of personal honor that is based upon courtesy, integrity, common sense, and respect for others both within and outside the classroom.

Plagiarism on any academic endeavors at Barton Community College will not be tolerated. The student is responsible for learning the rules of, and avoiding instances of, intentional or unintentional plagiarism. Information about academic integrity is located in the Student Handbook.

The College reserves the right to suspend a student for conduct that is determined to be detrimental to the College educational endeavors as outlined in the College Catalog, Student Handbook, and College Policy & Procedure Manual. [Most up-to-date documents are available on the College webpage.]

Any student seeking an accommodation under the provisions of the Americans with Disability Act (ADA) is to notify Student Support Services via email at disabilityservices@bartonccc.edu.

### COURSE AS VIEWED IN THE TOTAL CURRICULUM

Business Mathematics is designed for students in two-year vocational programs preparing to work in an office or similar setting where mathematical skills will play an important role. This course provides a background of general and specific knowledge of business mathematical concepts.

This course is not a prerequisite for higher-level mathematics courses, nor is it designed to prepare the student for higher-level business courses.

This course is an approved general education course for the Associate in Applied Science degree at Barton and does not fulfill the math requirements for other Associate degrees. Transferability varies among institutions, and perhaps even among departments, colleges, or programs within an institution. Also, these requirements may change from time to time and without notification. Therefore, it shall be the student’s responsibility to obtain relevant information from intended transfer institutions during his/her tenure at Barton Community College to insure that he/she enrolls in the most appropriate set of courses for transferability.

### ASSESSMENT OF STUDENT LEARNING

Barton Community College is committed to the assessment of student learning and to quality education. Assessment activities provide a means to develop an understanding of how students learn, what they know, and what they can do with their knowledge. Results from these various activities guide Barton, as a learning college, in finding ways to improve student learning.

Upon successful completion of this course, the student will be able to:

1. **Solve basic math problems using whole numbers, fractions decimals, and percents.**
2. Convert improper fractions to whole or mixed numbers and mixed numbers to improper fractions
3. Add, subtract, multiply and divide fractions.
4. Add, subtract, multiply and divide decimals
5. Convert decimals to fractions and fractions to decimals.
6. Convert percents to decimals and decimals to percents.
7. Convert fractions to percents and percents to fractions
8. Explain the place values of whole numbers and decimals
9. Round decimals.
10. **Solve business math problems using equations**
11. Explain the concept, terminology and rules of equations.
12. Write expressions and equations from written statements.
13. Solve equations for the unknown and prove the solution.
14. Express a relationship as a ratio.
15. Set up proportions.
16. Apply ratios and proportions to problem-solving situations.

1. **Explore the mathematics of buying and selling.**
2. Calculate the rate of percent increases and decreases.
3. Calculate the percent markup based on cost.
4. Calculate the selling price when cost and percent markup based on cost are known.
5. Calculate the cost when selling price and percent markup based on cost are known.
6. Calculate percent markup based on selling price.
7. Calculate selling price when cost and percent markup based on selling price are known.
8. Calculate cost when selling price and percent markup based on selling price are known.
9. Convert percent markup based on cost to percent markup based on selling price, and vice versa.
10. Determine the amount of markdown and the markdown percent.
11. Determine the selling price after a markdown and the original price before a markdown.
12. Compute the final selling price after a series of markups and markdowns.
13. Calculate the selling price of perishable goods.
14. List the key assumptions of each inventory method.
15. Calculate the cost of ending inventory and cost of goods sold for each inventory method.
16. Calculate the cost ratio and ending inventory at cost for the retail method.
17. Calculate the estimated inventory, using the gross profit method.
18. Explain and calculate inventory turnover.
19. Explain overhead; allocated overhead according to floor spaces and sales.
20. **Compute simple and compound interest.**
21. List the steps to complete the U.S. Rule.
22. Complete the proper interest credits under the U.S. Rule
23. Compute simple interest for loans with terms of years or months.
24. Calculate simple interest for loans with terms of days by using exact interest or

ordinary interest methods.

1. Calculate the maturity value of a loan.
2. Calculate the number of days of a loan.
3. Determine the maturity date of a loan.
4. Solve for the principal, rate, or time.
5. Calculate loans involving partial payments before maturity.
6. Calculate bank discount and proceeds for simple discount notes.
7. Calculate the true or effective rate of interest for a simple discount note.
8. Discount notes before maturity.
9. Manually calculate the compound amount (future value) and compound interest.
10. Compute the compound amount (future value) and compound interest using the compound interest tables.
11. Create compound interest table factors for periods beyond the table.
12. Calculate the annual percentage yield (APY) or effective interest rate.
13. Calculate the compound amount by using the compound interest formula.
14. Calculate the present value of a future amount by using the present value tables.
15. Create present value table factors for periods beyond the table.
16. Calculate the present value of a future amount by using the present value formula.
17. **Indicate and compute finance charges in installment buying and revolving charge accounts.**
    1. Identify information found on credit card statements.
    2. Calculate the amount financed, finance charge, and deferred payment.
    3. Calculate finance charges on credit cards, including revolving charges
    4. Calculate the rebate and payoff for Rule of 78
18. **Maintain checking accounts and prepare bank reconciliations.**
19. Define and state the purpose of signature cards, checks, deposit slips, check stubs, check registers and endorsements.
20. Correctly prepare deposit slips, write checks and complete a check register.
21. Define and state the purpose of a bank statement.
22. List the steps to complete bank reconciliation; prepare bank reconciliation.
23. **Compute payroll.**
24. Calculate salary on the basis of weekly, biweekly, semimonthly, and monthly pay periods.
25. Calculate gross pay by hourly wage, including regular and overtime pay.
26. Calculate gross pay by straight and differential piecework schedules.
27. Calculate gross pay by straight and incremental commission, salary plus commission and drawing accounts.
28. Explain and calculate federal and state unemployment taxes.
29. Prepare and explain the parts of a payroll register.
30. Review Internal Revenue Service payroll forms.
31. Compute FICA taxes, social security, Medicare, federal income tax withholding (FIT).
32. Determine an employee’s total withholding for federal income tax, social security, and Medicare using the combined wage bracket tables.
33. **Understand and solve mortgage problems.**
34. List the types of mortgages available.
35. Utilize an amortization chart to compute monthly mortgage payments.
36. Calculate the total cost of interest over the life of a mortgage.
37. Calculate and identify the interest and principle portion of each monthly payment.
38. Prepare an amortization schedule.

Supplemental Competencies

1. **Complete depreciation problems.**
   1. Explain the concept and causes of depreciation.
   2. Prepare a depreciation schedule.
   3. Calculate depreciation using a variety of methods
   4. Explain the goals of ACRS and MACRS and their limitations.
   5. Solve business problems involving depreciation.
   6. Determine gain or loss on the sale of an asset.
2. **Evaluate investments in stocks, bonds, and mutual funds.**
3. Determine the selling price, volatility, and average selling price over the last year of a specific stock, bond, or mutual fund.
4. Use the Internet to determine the selling price, volatility, and average selling price over the last year of a specific stock, bond, or mutual fund.
5. Apply terminology associated with stocks, bonds, and mutual funds.
6. Calculate the distribution of dividends to preferred and common stockholders.
7. Calculate the current yield for a stock.
8. Determine the price-earnings ratio for a stock.
9. Compute the cost, proceeds, and gain or loss on a stock transaction.
10. Compute the cost of purchasing bonds and the proceeds from the sale of bonds.
11. Calculate the current yield for a bond.
12. Calculate the sales charge and the sales charge percent of a mutual fund.
13. Calculate the net asset value of a mutual fund.
14. Calculate the number of shares purchased of a mutual fund.
15. Calculate return on investment.

### INSTRUCTOR'S EXPECTATIONS OF STUDENTS IN CLASS

### TEXTBOOKS AND OTHER REQUIRED MATERIALS

### REFERENCES

### METHODS OF INSTRUCTION AND EVALUATION

### ATTENDANCE REQUIREMENTS

### COURSE OUTLINE