

# Math with Business Applications

## Course Outcome Summary

### Course Information

<b>Project Type</b>	Course
<b>Organization</b>	Wisconsin Technical College System (WTCS)
<b>Developers</b>	Instructors from the math department and instructors from the business occupations programs from the Wisconsin Technical Colleges Curriculum facilitators: Amy Mangin, NWTC, Claudeen Oebser, CVTC
<b>Development Date</b>	9/15/2005
<b>Revised Date</b>	11/9/2005
<b>Course Number</b>	10-804-123
<b>Instructional Level</b>	Associate Degree
<b>Instructional Area</b>	General Studies
<b>Division</b>	General Education
<b>Department</b>	Mathematics
<b>Potential Hours of Instruction</b>	54
<b>Total Credits</b>	3

### Description

This course covers...real numbers, basic operations, linear equations, proportions with one variable, percents, simple interest, compound interest, annuity, apply math concepts to the purchasing/buying process, apply math concepts to the selling process, and basic statistics with business/consumer applications.

### Target Population

Business Occupations and other associate degree students

### Types of Instruction

Instruction Type	Contact Hours	Credits
Classroom Presentation	54	3

### Competencies

- Utilize real numbers and basic operations in consumer/business applications**  
**You will demonstrate your competence:**
  - o in a math assessment with business applications**Your performance will be successful when:**
  - o you perform basic operations with fractions
  - o you perform basic operations with decimals
  - o you perform basic operations with signed numbers
  - o you employ the order of operations to simplify an expression
  - o the precision of the answer is expressed in terms appropriate to the problem
  - o you use real numbers and basic operations to solve business/consumer problems
- Solve linear equations and proportions with one variable**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you identify the unknown with the appropriate variable
- o you write the equation that relates the known information with the appropriate variable
- o you simplify each side of the equation
- o you isolate the variable
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving linear equations and proportions with one variable
- o you evaluate formulas for given value of the variables

**3. Solve percentage problems**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you convert between percents, decimals, fractions
- o you identify the base, rate and amount in problem
- o you compute the base, rate, or amount
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving percents

**4. Solve simple interest problems**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you compute principal, rate, or time using simple interest formula
- o you determine due date of a promissory note
- o you compute maturity value, principal, rate, and time using maturity value formula
- o you determine present and future values
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving simple interest

**5. Solve compound interest problems**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you differentiate between simple and compound interest
- o you determine the number of periods
- o you determine the rate per period
- o you compute compound interest and compound amount
- o you determine present and future values of a sum
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving compound interest

**6. Solve annuity problems**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you differentiate between single payment and annuity
- o you compute the amount or payment of an annuity
- o you calculate the present and future value of an annuity
- o you distinguish the characteristics of a sinking fund and annuity
- o you calculate the amount of a sinking fund payment.
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving annuities

**7. Apply math concepts to the purchasing/buying process**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you calculate trade discounts
- o you calculate net cost
- o you differentiate between single and series discounts
- o you express a series discount as a single discount equivalent
- o you determine cash discount period
- o you compute a cash discount
- o you calculate credit given for partial payment of an invoice
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving the purchasing/buying process

**8. Apply math concepts to the selling process**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you distinguish between markup based on cost and markup based on selling price
- o you compute selling price, cost or markup based on cost
- o you compute selling price, cost or markup based on selling price
- o you compute sale price, markdown, or original price
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving the selling process

**9. Interpret basic statistics**

**You will demonstrate your competence:**

- o in a math assessment with business applications

**Your performance will be successful when:**

- o you interpret charted data
- o you construct charts/graphs
- o you determine the appropriate chart given the raw data
- o you calculate measures of central tendencies
- o you interpret measures of dispersion
- o you determine the probability of an event involving normally distributed data
- o the precision of the solution is expressed in terms appropriate to the problem
- o you solve business/consumer problems involving basic statistics