## SYLLABUS

DIVISION: Business and Engineering Technology
REVISED: Spring 2014
CURRICULAR IN WHICH COURSE IS TAUGHT: Business Management and Marketing
COURSE NUMBER AND TITLE: Bus 122, Business Mathematics II
CREDIT HOURS: LEC: 3 hours per week LAB: 0 LEC/LAB COMB: 3
I. CATALOG DESCRIPTION: Applies mathematical operations to business problems. Reviews basic statistics, distribution of profit and loss in partnerships, distribution of corporate dividends, mortgage amortization, insurance, simple interest, present value, bank discount notes, multiple payment plans, compound interest, annuities, sinking funds, and depreciation, and mortgage amortization.
II. RELATIONSHIP OF THE COURSE TO CURRICULAR OBJECTIVES:

BUS 122 will address the following DCC Business Management outcomes: Graduates will demonstrate the ability to perform and interpret basic business math, accounting, and business statistical calculations.
III. REQUIRED BACKGROUND/PREREQUISTIES: BUS 121

## IV. COURSE CONTENT:

- Promissory Notes: Simple Discount Notes, and the Discount Process
- Structure of a Promissory Note
- Discounting an Interest-Bearing Note before maturity
- Compound Interest and Present Value
- Ordinary Annuities and Annuity Due
- Present Value of an Ordinary Annuity
- Sinking Funds
- Cost of Installment Buying
- Paying off Installment Loans before Due Date
- Revolving Charge Credit Cards
- The Cost of Home Ownership
- Types of Mortgages and the Amortization Schedule
- How to Read, Analyze, and Interpret Financial Reports
- Balance Sheet
- Income Statement
- Trend and Ratio Analysis
- Concept of Depreciation: Straight-Line Method, Units-Of-Production Method, Declining-Balance Method
- Modified Accelerated Cost recovery System
- Inventory and Overhead
- Assigning costs to Ending Inventory: Specific Identification, Weighted Average, FIFO, and LIFO
- Retail Method: Gross Profit, Inventory Turnover, and Distribution of Overhead
- Sales and Excise Taxes
- Property Taxes
- Life, Fire, and Auto Insurance
- Stocks, Bonds, and Mutual Funds
- Business Statistics: Mean, Median, and Mode
- Frequency Distributions and Graphs


## V. THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE (Place X by all that apply)

$\begin{array}{ll}X & \text { Communication } \\ \underline{X} & \text { Critical Thinking }\end{array}$
_ Cultural and Social Understanding
Information Literacy
Personal Development
Quantitative Reasoning
Scientific Reasoning
VI. LEARNER OUTCOMES

Learner outcome

- Differentiate between interest-bearing and noninterest-bearing notes
- Calculate bank discount and proceeds for simple discount notes
- Calculate and compare interest, maturity value, proceeds, and effective rate of a simple interest note
- Explain and calculate the effective rate for a treasury bill
- Calculate the maturity value, bank discount, and proceeds of discounting an interest-bearing note before maturity
- Identify and complete the four steps of the discounting process


## Learner outcome

- Compare simple interest with compound interest
- Calculate the compound amount and interest manually and by table lookup
- Explain and compute the effective rate
- Compare present value with compound interest
- Compute present value by table lookup
- Check present value by compounding


## Learner outcome

- Differentiate between contingent annuities and annuities certain
- Calculate future value of an ordinary annuity and annuity due manually and by table lookup
- Calculate the present value of an ordinary annuity by table lookup and manually check
- Compare the calculation of the present value of one lump sum verses an ordinary annuity
- Calculate the payment made at the end of each period by the table lookup
- Check table lookup by using ordinary annuity table


## VII. EVALUATION

## Evaluation method

In-class problem assignments Written tests

## Evaluation method

In-class problem assignments Written tests

## Evaluation method

In-class problem assignments Written tests

| Learner outcome |
| :--- |
| • Calculate the amount financed, finance charge, and |

## Evaluation method

In-class assignments
Written tests

- Calculate the estimated APR by table lookup
- Calculate the monthly payment by formula and by table lookup
- Calculate the rebate and payoff
- Calculate the finance charges on revolving charge credit card accounts


## Learner outcome

- List the types of mortgages available
- Utilize an amortization chart to compute monthly mortgage payments
- Calculate the total cost of interest over the life of a mortgage
- Calculate and identify the interest and principal portion of each monthly payment
- Prepare an amortization schedule


## Learner outcome

- Explain the purpose and the key terms on a balance sheet
- Explain and complete vertical and horizontal analysis
- Explain the purpose and key terms on an income statement
- Explain and complete vertical and horizontal analysis
- Explain and complete a trend analysis
- List, explain, and calculate key financial ratios


## Learner outcome

- Explain the concept and causes of depreciation
- Prepare a depreciation schedule and calculate partial-year depreciation
- Explain how use affects the units-of-production method
- Prepare a depreciation schedule
- Explain the importance of residual value in the depreciation schedule
- Prepare a depreciation schedule
- Explain the goals of ACRS and MACRS and their limitations
- Calculate depreciation using the MACRS guidelines


## Learner outcome

- List the key assumptions of each inventory method
- Calculate the cost of ending inventory and cost of goods sold for each inventory method
- Calculate the cost ratio and ending inventory at cost for the retail method
- Calculate the estimated inventory using the gross profit method
- Explain and calculate inventory turnover
- Explain overhead; allocate overhead according to floor space and sales


## Evaluation method

In-class problems assignments Written tests

## Evaluation method

In-class problem assignments Written test

## Evaluation method

In-class problem assignments Written test

## Evaluation method

In-class problem assignments
Written test

| Learner outcome <br> - Compute sales tax on goods sold involving trade and cash discounts and shipping charges <br> - Explain and calculate excise tax <br> - Calculate the tax rate in decimal <br> - Convert tax rate in decimal to percent, per $\$ 100$ of assessed value, per \$1,0000 of assessed value, and in mills <br> - Compute property tax due | Evaluation method <br> In-class problem assignments Written test |
| :---: | :---: |
| Learner outcome <br> - Explain the types of life insurance; calculate life insurance premiums <br> - Explain and calculate cash value and other nonforfeiture options <br> - Explain and calculate premiums for fire insurance of buildings and their contents <br> - Calculate refunds when the insured and the insurance company cancel fire insurance <br> - Explain and calculate insurance loss when coinsurance is not met <br> - Explain and calculate the cost of auto insurance | Evaluation method In-class problem assignments Written test |
| Learner outcome <br> - Read and explain stock quotations <br> - Calculate dividends of preferred and common stocks; calculate return on investment <br> - Read and explain bond quotations <br> - Compare bond yields to bond premiums and discounts <br> - Explain and calculate net asset value and mutual fund commissions <br> - Read and explain mutual fund quotations | Evaluation method <br> In-class problem assignments Written test |
| Learner outcome <br> - Define and calculate the mean <br> - Explain and calculate a weighted mean <br> - Define and calculate the median <br> - Define and identify the mode <br> - Prepare a frequency distribution <br> - Prepare bar, line, and circle graphs <br> - Calculate price relatives and cost comparisons <br> - Explain and calculate the range <br> - Define and calculate the standard deviation <br> - Estimate percentage of data by using standard deviations | Evaluation method <br> In-class problem assignments Written test |

