

# Warehousing and Distribution

## Jobs, Companies, and the Economy—Basic Concepts for the Employee

### Objectives:

- Conclude how the economy will affect you as a consumer and as an employee
- Explain the concept of competition and how a business must react to market demands
- Evaluate how government policies affect the amount of saving and investing within an economy
- Defend the use of a flexible and empowered workforce in making a business more competitive
- Explain various economic measuring tools such as the inflation rate, the unemployment rate, and the GDP
- Appraise the current status of American labor in general and the status of American labor unions in particular
- Recognize how you as an employee or as an employer must compete in an increasingly international marketplace

## Elements of Business Success

### Objectives:

- Define business
- Define attitudes
- Describe how attitude affects your career in business
- Define and discuss productivity
- Contrast outcomes and processes
- Explain how positive professional relationships can be built
- Identify personal and organizational excellence
- Explain the importance of self-motivation and the ability to motivate others
- Discuss how motivation can be developed
- Explain management of time and other resources
- Define career management

## Fundamentals of Business

### Objectives:

- Describe the origins of business
- Describe the evolution of business
- Contrast raw materials and finished goods
- Contrast manufacturing versus service businesses
- Describe the business system
- Describe how maintaining focus, encouraging productivity, and implementing change are important to managing a business
- Discuss quality control, innovation, and profit
- Discuss the advantages of risk taking

## Introduction to Marketing

### Objectives:

- Define marketing
- Discuss how marketing benefits the consumer and the supplier
- Discuss the Four P's of marketing
- Compare mass marketing versus market segmentation
- Discuss how markets are segmented
- Discuss changes in consumer behavior
- Discuss product life cycles
- Explain the stages of the purchase process
- Discuss market research methods

## Selling Your Ideas

### Objectives:

- Explain what employers seek in employees
- Discuss the way that attitude influences peoples' receptiveness to ideas
- List the four steps to winning approval of your ideas
- Use good speaking and listening skills to become a good communicator
- Describe how to earn respect and cooperation

## Problem Solving and Troubleshooting

### Objectives:

- Define problem solving, troubleshooting, and critical thinking
- Apply a logical procedure to solving problems and troubleshooting systems
- Select and apply specific tools to help in problem solving and troubleshooting
- Identify tools and measurement devices that help in troubleshooting common industrial systems
- Effectively collect information related to a problem at hand
- Improve your own "metacognitive" abilities related to understanding complex systems

## Microsoft Word 2016

### Objectives:

- Investigate the essential functions of MS Word 2016
- Create a simple document
- Format text in a simple document
- Create documents using page level formatting features
- Produce documents with graphic elements, including images, charts, and clipart
- Create a table within a document to organize information
- Integrate information from a table into a mail merge document

## Sales Records and Reports

### Objectives:

- Explain the purpose of keeping records and writing reports
- Describe procedures for computing sales percentages and correlating sales reports
- Discuss use of reports in budgeting and forecasting

## Addition and Subtraction

### Objectives:

- Define the following terms: whole number, numeral, digit, decimal, place value, addend, sum, minuend, subtrahend, and difference
- Properly place commas in large numbers
- Explain the significance of the digit zero in a number
- Differentiate between concrete and abstract numbers
- Properly prepare numbers for addition and subtraction
- Perform addition and subtraction on numbers
- Check your answers to both addition and subtraction problems
- Use a calculator to add and subtract numbers

## Multiplication and Division

### Objectives:

- Define the following terms: factor, multiplicand, multiplier, partial product, product, dividend, divisor, quotient, and remainder
- Recognize the various signs used for multiplication and division
- Properly prepare numbers for multiplication and division
- Perform multiplication and division on whole numbers, decimal numbers, and mixed decimal numbers
- Check your answers to both multiplication and division problems
- Find the average of a group of numbers
- Use a calculator to multiply and divide numbers

## Fractions, Percents, Proportions, and Angles

### Objectives:

- Define the following terms: fraction, proper fraction, improper fraction, lowest common denominator, percent, ratio, and proportion
- Add, subtract, multiply, and divide fractions
- Change fractions to decimals and decimals to fractions
- Solve problems involving percent
- Work with ratios and equivalent ratios
- Solve proportion problems
- Use a protractor to measure angles
- Lay out templates for checking angles
- Use a calculator to solve percent problems, to convert fractions to decimals, and to calculate missing terms in proportions

## Metric System

### Objectives:

- Name the base units most commonly used in the metric system and identify what they're used to measure
- Identify metric prefixes and their values
- Apply conversion factors to create a unit that's larger or smaller than the base unit
- Estimate lengths in metric units
- Express temperature in degrees Celsius
- Define the terms mass, density, force, torque, and pressure, and identify the metric units used to measure each one
- Use a conversion table to convert metric units to English units and English units to metric units
- Use a calculator to perform metric conversions

## Formulas

### Objectives:

- Explain the use of variables in formulas
- Prepare and use formulas to solve problems
- Use formulas to calculate the perimeter of a triangle and a rectangle, and the area of a triangle, a rectangle, and a circle
- Use formulas to calculate distance, current in a circuit, and the volume of a pyramid and a sphere
- Use a calculator to find square roots and solve formulas
- Substitute given numerical values for letters in a formula and find the unknown quantity
- Transform and solve equations and formulas

## Introduction to Algebra

### Objectives:

- Explain the difference between positive and negative numbers and their uses
- Perform basic arithmetic operations with signed numbers
- Raise a number to any power
- Use the order of operations for solving problems involving multiple operations
- Define the following words: term, constant, coefficient, exponent, monomial, trinomial, and polynomial
- Identify and combine like terms in an expression
- Perform basic arithmetic operations with signed terms
- Multiply and divide terms containing exponents
- Remove parentheses from an expression and simplify the expression

## Linear Distance and Measurement

### Objectives:

- Measure using both English and metric (SI) units of length
- Calculate the perimeters of rectangles, squares, and triangles
- Calculate the areas of objects such as rooms or machine bases
- Calculate the circumference of circular objects such as pipes or tanks
- Measure distances using rigid and flexible rules, thickness gages, and screw pitch gages
- Make precise measurements using vernier calipers and micrometers

## Bulk Measurement

### Objectives:

- Measure an angle by degrees
- Find the areas of rectangles, triangles, and circles
- Find the volumes of prisms, cylinders, and cones
- Find the mass of material stored in a container
- Determine the amount of material that can be stored or handled
- Discuss the types and uses of conveyors and weighing systems

## Temperature Measurement

### Objectives:

- Change temperature units from one system to another
- Discuss the use of the various types of thermometers
- Select the type of thermometer to be used at certain temperatures

## Energy, Force, and Power

### Objectives:

- Distinguish among the concepts of energy, force, and power
- Explain what the term work means and how it's measured
- Know by sight the basic machines: lever, inclined plane, wedge, wheel and axle, and screw
- Solve simple problems that involve levers, mechanical advantage, and machine efficiency
- List the forms of energy that have important industrial applications and the instruments used for measuring energy

## Fluid Measurement

### Objectives:

- Understand the properties of fluids
- Determine the density, specific gravity, and viscosity of fluids
- Express pressure in three different units
- Measure the pressure of fluids using manometers and Bourdon tube pressure gages
- Measure the flow rate of fluids using different types of flowmeters

## Introduction to Print Reading

### Objectives:

- Identify the various kinds of lines used on drawings
- Compare and contrast the various types of drawings
- Relate the information given in the title block and bill of material to the drawing
- Define different types of scales used on drawings
- Identify the different views used on drawings

## Reading Shop Prints, Part 1

### Objectives:

- Properly interpret working drawings (including dimensions and tolerances)
- Interpret symbols, notes, and specification
- Identify material requirements
- Interpret drawings to determine the proper procedure to make the part

## Reading Shop Prints, Part 2

### Objectives:

- Read and properly interpret various shop prints
- Interpret and use cam prints
- Interpret and use gear prints
- Read and understand an assembly drawing and bill of materials
- Read simple sheet metal drawings

## Dimensioning

### Objectives:

- Identify the height, width, and length dimensions of a drawing
- Interpret dimensions on angles, arcs, fillets, rounds, holes, and chamfers
- Interpret the surface finish symbols for roughness, waviness, and lay

## Tolerancing and Symbols

### Objectives:

- Tell the position method from the bracket method of dual dimensioning
- Identify the three general classes of fit
- Interpret unilateral and bilateral tolerances
- Interpret the various symbols and notations used on drawings

## Sectional Views and Simplified Drafting

### Objectives:

- Tell one type of section from another
- Interpret the various types of sections
- Interpret drawings using simplified drafting methods

## Business Mathematics, Part 1

### Objectives:

- Identify the best approach to a mathematical problem
- Calculate the total value of a store inventory, given the value of each element in the inventory
- Calculate the balance of a checkbook
- Calculate percent
- Use the appropriate table to calculate interest compounded semiannually and present worth when interest is compounded annually
- Calculate simple interest for several years and, using reduced fractions or the 6%-60 days method, for a specified number of days
- Reduce a discount series to a single discount
- Use the appropriate table to calculate the amount in a sinking fund after a number of years if a specified sum is deposited semiannually and interest is compounded semiannually
- Calculate the net proceeds from a sale, given all prices and overhead costs
- Identify the acceptable payments on an invoice with a cash discount
- Calculate the cost and interest rate for an installment purchase

## Business Mathematics, Part 2

### Objectives:

- Identify net proceeds
- Calculate the amount of a discounted 60-day note
- Calculate the exact number of days and the 30-day month time between two dates
- Calculate the proceeds of an interest-bearing 90-day note that's discounted after a set number of days
- Calculate the quarterly premium for ordinary life insurance
- Calculate the price for a given number of shares of stock, given the quotations and brokerage rate
- Calculate the premium for a five-year period on a given amount of fire insurance, given the annual rate
- Calculate annual depreciation given cost, estimated life, and scrap value
- Calculate the selling price for an article given the cost, overhead, and percent desired for profit
- Calculate the profit or loss for a store given the cost of goods purchased, net sales, and total overhead
- Calculate the face value of a note, given the proceeds, when the note is discounted at a given rate for a given number of days

## Using Words Well

### Objectives:

- Describe the basics of the writing process and the ABC method of organizing material for a document
- Identify the parts of speech in a sentence
- Demonstrate correct pronoun use
- Choose proper and effective words for writing your documents

## Writing Effective Communications

### Objectives:

- Identify the elements of a well-written sentence
- Use length, directness, emphasis, and variety to craft impactful sentences
- Write paragraphs using topic sentences and logical development
- Describe how to write an effective cover letter and resume
- Format and write an interoffice memorandum, a routine business letter, and an effective email
- Identify the different ways to write for blogs, the internet, and social media

## Organizing, Researching, and Illustrating Your Material

### Objectives:

- Describe how to create an organized formal outline
- Identify the types of research and methods of documentation used in business and technical writing
- Explain how to create visual interest and clarity in your report with illustrations, tables, graphs, charts, and overall design

## Writing the Report

### Objectives:

- Explain the purpose and importance of various types of informal reports
- Describe the nature of formal reports and identify their components

## Proposals and Special Projects

### Objectives:

- Differentiate among external, internal, informal, and formal proposals
- Describe an object or a process, and prepare a set of instructions
- Describe the preparation and submission of professional and technical articles, as well as manuals

## Trades Safety: Getting Started

### Objectives:

- List the physical hazards associated with chemicals and describe how to avoid them
- Name several electrical shock hazards and the techniques used to prevent shocks
- List the steps in a lockout/tagout procedure
- Explain the importance of machine guarding, and name several types of machine guards
- Name the five classes of fire and how to extinguish each of them
- Describe the proper technique used to manually lift a heavy load
- Explain how to avoid hand injuries when using hand and power tools
- List some of the hazards involved in welding and hot cutting operations and how to prevent them
- Explain how job analysis and ergonomics are used to improve the workplace
- Explain the importance of using personal protective equipment (PPE)
- Name the agencies and organizations that make and enforce safety regulations, and explain an employee's responsibilities under those regulations



## Working Safely with Chemicals

### Objectives:

- Recognize the different ways in which a chemical can cause you physical injury
- Name the paths of entry along which chemicals enter your body
- Describe the basic types of injuries caused by chemicals
- Identify potential chemical hazards in the workplace
- Describe how to identify, store, and label hazardous chemicals
- List several methods used to prevent chemical accidents
- Explain why proper training is important to chemical handling
- Describe the types of personal protective equipment used when handling chemicals
- Explain the role of government agencies in enforcing chemical regulations

## Fire Safety

### Objectives:

- Describe the types of property losses and injuries associated with fires
- Explain how fires are ignited
- Identify the five classes of fire
- Describe the primary fire hazards found in the workplace
- Explain the various ways in which fires can be prevented
- Describe the operation of several different fixed fire protection systems
- Identify the proper type of portable fire extinguisher to use on a fire
- Describe the operation of several different types of fire extinguishers
- Explain how to defend yourself and others in a fire situation
- Describe how to evacuate a burning building in a safe manner

## Safe Handling of Pressurized Gases and Welding

### Objectives:

- Identify common welding gases and the hazards associated with each of them
- Safely handle and store different types of gas cylinders
- Recognize the safety considerations involved in the setup and operation of electric arc-welding equipment
- Explain how to safely set up and operate a basic gas welding rig
- Identify welding equipment malfunctions and take corrective action
- Utilize fire prevention and protection methods specific to welding operations
- Discuss the importance of the hot-work-permit program in your facility
- Explain the correct use of protective clothing and equipment for welding
- Understand the importance of proper ventilation when welding
- Describe how to effectively deal with confined spaces when performing welding operations

## Advanced Electrical Safety

### Objectives:

- Explain how electricity can harm you and property
- Discuss the importance of using quality electrical components
- Describe why it's important to properly ground electrical installations
- Understand the type of equipment used in hazardous locations
- List the safety practices required when performing electrical work
- Discuss the importance of workspace clearance around electrical enclosures

## Material-Handling Safety

### Objectives:

- Recognize the hazards associated with handling materials
- Know the types of injuries that can be caused by these hazards
- Understand how to effectively use safe material-handling practices
- Know how to avoid physical injury when handling loads
- Identify the parts of a powered lift truck and similar mechanized material-handling equipment
- Explain how to operate various types of mechanized material-handling equipment safely
- Know and follow the rules for safe operation of powered industrial material-handling equipment
- Understand and respect the limits and restrictions placed on powered material handling mechanisms

## Machine Safety

### Objectives:

- Recognize the basic machine motions that can present a hazard to you
- Recognize the types of machinery most likely to be hazardous to you
- Understand the types of injuries caused by accidents commonly associated with unsafe machine-operating procedures
- Discuss the importance of machine guarding and how to incorporate methods of guarding to avoid physical injury
- Recognize the types of machine guards commonly used in industry
- Control various forms of hazardous machine energy through the use of lockout/tagout procedures
- Understand how and why to properly use personal protective equipment for added protection when operating industrial equipment

## Managing Physical Distribution, Part 1

### Objectives:

- Understand the meaning, perspective, and importance of physical distribution
- Identify various functional areas of physical distribution and how they interrelate to forecasting, location, information systems, and networks
- Define the basic elements of system analysis and conduct a systems audit
- Analyze, classify, and assign physical distribution costs
- Apply quantitative techniques to determining single and multiple facility locations
- Classify and plan for basic modes of transportation

## Managing Physical Distribution, Part 2

### Objectives:

- Describe how inventories are planned and managed for cost-effective distribution
- Define just-in-time (JIT) management and understand its application to the physical distribution process
- Define distribution requirement planning (DRP)
- Illustrate the logic of material requirements planning (MRP) as applied to a multilevel distribution network
- Understand how computer technology assists in distribution information processing and communication
- Clarify and interpret typical organizational forms and performance measurements