

## BUSINESS PRINCIPLES FOR PLUMBERS

**Module 02401-14** introduces trainees to concepts and practices that are essential for competitive, successful plumbing businesses. The module also covers basic business accounting and project estimating, as well as techniques for cost control and task organization.

### Objectives

#### Learning Objective 1

1. Identify cost control measures.
  - a. Interpret a balance sheet and a profit and loss statement.
  - b. Interpret how cost control measures affect the profit and loss statement.
  - c. Interpret how on-the-job task organization affects profit and loss.

#### Learning Objective 2

2. Identify the information required to prepare a material takeoff.
  - a. Identify the information required for insurance and liability.
  - b. Identify the information required for the estimating process.
  - c. Identify the information required for updates and revisions.

### Performance Tasks

#### Performance Task 1

##### (Learning Objective 2)

- Prepare a material takeoff as part of an estimate.

### Teaching Time: 15 hours

(Six 2.5-hour Classroom sessions)

Session time may be adjusted to accommodate your class size, schedule, and teaching style.

### Prerequisites

*Core Curriculum, Plumbing Level One, Plumbing Level Two, and Plumbing Level Three*

### Before You Begin

As you prepare for each session, allow sufficient time to review the course objectives, content, visual aids (including the PowerPoint® presentation), and these lesson plans, and to gather the required equipment and materials. Consider time required for demonstrations, laboratories, field trips, and testing.

Using your access code, download the Module Examinations and Performance Profile Sheets from [www.nccerirc.com](http://www.nccerirc.com). The passing score for submission into NCCER's Registry is 70 percent or above for the Module Examination; performance testing is graded pass or fail.



## Safety Considerations

Safety is paramount in the plumbing trade and safe habits and practices must be emphasized whenever possible. Performance Tasks must be completed under your supervision. Each trainee must use required PPE and follow safe tool practices and procedures.

### Classroom Equipment and Materials

Whiteboard/chalkboard  
Markers/chalk  
Pencils and paper  
*Plumbing Level Four* PowerPoint®  
Presentation Slides  
Computer  
Copies of the Module Examination and Performance Profile Sheets  
Vendor-supplied videos/DVDs showing business applications related to plumbing (*optional*)  
TV/DVD player

### Equipment and Materials for Laboratories and Performance Testing

Assortment of tools, equipment, cell phones, and other devices  
Blank copies of the following forms:  
Balance sheets  
Change orders (*optional*)  
Daily work reports  
Purchase orders  
Takeoff worksheets

Completed copies of change orders  
Copies of moderately difficult plumbing drawings  
Copies of simple plumbing drawing  
Project schedule  
Sample insurance policy for a construction project  
Sample organizational chart

### Additional Resources and References

This module presents thorough resources for task training. The following resource material is suggested for further study:

*Building Contractor: Start and Run a Money-Making Business*. 1993. R. Dodge Woodson. New York: TAB Books.

*Construction Accounting & Financial Management*, Third Edition. 2012. Steven Peterson. New York: Prentice Hall.

*Financial Management and Accounting for the Construction Industry*. 1988. New York: Construction Financial Management Association.

*Financial Management in Construction Contracting*. 2013. Andrew Ross and Peter Williams. Ames, IA: Wiley-Blackwell.

*Plumbing Contractor: Start and Run a Money-Making Business*. 1994. R. Dodge Woodson. Blue Ridge Summit, PA: TAB Books.

*Plumbing Estimating Methods*, Third Edition. Joseph J. Galeno and Sheldon T. Greene. Kingston, MA: R.S. Means Company.

*Small Business Accounting Simplified*, Fifth Edition. 2010. Daniel Sitarz. Carbondale, IL: Nova Publishing Company.

There are a number of online resources available for trainees who would like more information on business principles for plumbers. A search for additional information may be assigned as homework to interested trainees.

# BUSINESS PRINCIPLES FOR PLUMBERS

The lesson plan for this module is divided into six 2.5-hour sessions. Each session includes 10 minutes for administrative tasks and one 10-minute break.

### SESSION ONE

Session One introduces the balance sheet and profit and loss (P & L) statement.

1. Show Session One PowerPoint® presentation slides.
2. Discuss how balance sheets are used by a plumbing company.
3. Discuss how profit and loss statements are used by a plumbing company.

### SESSIONS TWO AND THREE

Sessions Two and Three introduce the impact of cost control on the P & L statement.

1. Show Sessions Two and Three PowerPoint® presentation slides.
2. Discuss how cost control measures such as ordering of materials, material storage, and proper use of tools and equipment impact the P & L statement.
3. Discuss the use of purchase orders and invoices for ordering materials.
4. Discuss how cost control measures such as use of a company vehicle, change orders, and preplanning impact the P & L statement.
5. Discuss the use of change orders on a project.
6. Discuss how schedules are used to control costs.

### SESSIONS FOUR AND FIVE

Sessions Four and Five introduce the preparation of a material takeoff.

1. Show Sessions Four and Five PowerPoint® presentation slides.
2. Introduce trainees to the use of material takeoffs used in plumbing.
3. Provide an overview of the estimating process.
4. Demonstrate the proper method for performing a material takeoff.

### SESSION SIX

Session Six is a review and testing session. Have trainees complete the module Review Questions and Trade Terms Quiz. (Alternatively, these may be assigned as homework at the end of Session Five.) Answer any questions that trainees may have.

1. Have trainees complete the Module Examination. Any outstanding performance testing must be completed during this session.
2. Record the testing results on Training Report Form 200, and submit the report to your Training Program Sponsor.



**Materials Checklist for Module 02401-14, Business Principles for Plumbers**

Equipment and Materials					
Personal protective equipment:		Blank copies of balance sheets		Completed copies of change orders	
	None	Blank copies of change orders ( <i>optional</i> )		Copies of simple plumbing drawings	
Whiteboard/chalkboard		Blank copies of daily work reports		Copies of moderately difficult plumbing drawings	
Markers/chalk		Blank copies of purchase orders		Sample insurance policy for a construction project	
Pencils and paper		Blank copies of takeoff worksheets		Sample organizational chart	
<i>Plumbing Level Four</i> PowerPoint® Presentation Slides		Assortment of tools, equipment, cell phones, and other devices		Project schedule	
TV/DVD player					
Computer					
Copies of the Module Examination and Performance Profile Sheets					
Vendor-supplied videos/DVDs showing business applications related to plumbing ( <i>optional</i> )					

To the extent possible, and as required for performance testing, provide a selection of the tools listed for each session; alternatively, photos may be used to teach tool identification.