**CHAPTER 2**

**JOB ORDER COSTING**

**Student Learning Objectives and Related Assignment Materials**

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| ***Student Learning Objectives*** | ***Mini***  ***Exercises*** | ***Exercises*** | ***Problems***  ***(A & B)*** | ***Cases***  ***and***  ***Projects*** |
| 1. Describe the key differences between job order costing and process costing. | 1 |  |  | 1, 2 |
| 1. Describe the source documents used to track direct materials and direct labor cost to the job cost sheet. | 2, 7, 8, 10, 17 | 1, 3, 19, 24 |  | 2 |
| 1. Calculate a predetermined overhead rate and use it to apply manufacturing overhead cost to jobs. | 3, 4, 5, 12, 16 | 1, 5, 6, 7, 9, 10, 11, 12, 13, 16, 18, 19, 23 | 1, 3, 5, 6, 7, 8 | 1, 2, 3 |
| 1. Describe how costs flow through the accounting system in job order costing. | 8, 10, 12 | 1, 3, 7, 9, 10, 11, 13, 15, 16, 18, 19, 20, 23 | 1, 3, 5,6, 8 | 3, |
| 1. Calculate and dispose of overapplied or underapplied manufacturing overhead. | 6, 7, 12 | 7, 14, 16, 18, 19 | 1, 3, 5, 6, 7, 8 | 3 |
| 1. Calculate the cost of goods manufactured and cost of goods sold. | 14, 15, 16, 18, 19 | 6, 11, 13, 16, 17, 18, 19, 20 | 1, 6, 8 | 3 |
| 7. Apply job order costing to a service setting |  | 10, 12, 23 |  |  |
| S1 Prepare journal entries to record manufacturing costs in a job order cost system. | 9, 11, 13 | 2, 4, 8, 10, 12, 14 17, 21, 22 | 2, 4 | 3 |
| Sustainability focus |  | 24 |  |  |

**PowerPoint Slides**

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| ***Student Learning Objectives*** | ***PowerPoint® Slides*** |
| 1. Describe the key differences between job order costing and process order costing. | 1-6 |
| 1. Describe the source documents used to track direct materials and direct labor cost to the job cost sheet. | 7-10 |
| 1. Calculate a predetermined overhead rate and use it to apply manufacturing overhead cost to jobs. | 11-17 |
| 1. Describe how costs flow through the accounting system in job order costing. | 18-28 |
| 1. Calculate and dispose of overapplied and underapplied manufacturing overhead. | 29-32 |
| 1. Calculate the cost of goods manufactured and cost of goods sold. | 33-35 |
| 1. Apply job order costing to a service setting. | 36-40 |
| S1. Prepare journal entries to record the flow of manufacturing costs in a job order cost system. | 41-48 |

**Chapter Summary**

**LO 2-1 Describe the key differences between job order costing and process costing.**

* Process costing is used by companies that make homogeneous products using a continuous production process.
* Job order costing is used in companies that make unique products or provide specialized services.

**LO 2-2 Describe the source documents used to track direct materials and direct labor costs to the job cost sheet.**

* Direct materials are issued to production using a materials requisition form that shows the costs

and quantities of all materials requested and the job they were used for.

* Direct labor costs are recorded using labor time tickets showing the amount of time workers spent on each specific job.
* The direct costs incurred for each job are recorded on separate job cost sheets.

**LO 2-3 Calculate a predetermined overhead rate and use it to apply manufacturing overhead cost to jobs.**

* Because manufacturing overhead costs cannot be traced directly to individual jobs, we must use an allocation base, or cost driver, to calculate a predetermined overhead rate so that we can apply manufacturing overhead costs to each specific job.
* We call the overhead rate predetermined because it is calculated before actual costs are incurred, allowing managers to project the cost of a job before it begins.
* The predetermined overhead rate is calculated by dividing the *estimated* total manufacturing overhead by the *estimated* value of the cost driver.
* Manufacturing overhead is applied to specific jobs by multiplying the predetermined overhead rate by the *actual* amount of the cost driver used on the job.

**LO 2-4 Describe how costs flow through the accounting system in job order costing.**

* Initially, raw materials purchases are recorded in the Raw Materials Inventory account.
* When materials are placed into production, direct materials are recorded in the Work in Process Inventory account; indirect materials are recorded in the Manufacturing Overhead Account.
* When labor costs are incurred, direct labor is recorded in the Work in Process Inventory; indirect labor is recorded in the Manufacturing Overhead Account.
* When manufacturing overhead is applied to specific jobs, the Work in Process Inventory account is debited and the Manufacturing Overhead account is credited.
* When a job is completed, the total cost of goods completed is transferred from the Work in Process Inventory account to the Finished Goods Inventory account.
* When the job is delivered to the customer, the total cost is transferred from Finished Goods Inventory to the Cost of Goods Sold account.
* Actual manufacturing overhead costs are recorded on the debit side of the manufacturing overhead account.
* Nonmanufacturing costs are recorded as period expenses rather than as part of manufacturing cost flow.

**LO 2-5 Calculate and dispose of overapplied or underapplied manufacturing overhead.**

* Actual overhead costs are recorded on the debit side of the Manufacturing Overhead account; applied manufacturing overhead costs are recorded on the credit side. Any balance in the Manufacturing Overhead account represents the amount of overapplied or underapplied overhead.
* If the overhead account has a debit balance, actual overhead costs were higher than applied overhead costs; that is, overhead was underapplied.
* If the overhead account has a credit balance, applied overhead costs were higher than actual overhead costs; that is, overhead was overapplied.
* At the end of the year, the remaining overhead balance is typically transferred to the Cost of Goods Sold account. Overapplied overhead decreases (credits) the Cost of Goods Sold account; underapplied overhead increases (debits) the Cost of Goods Sold account.

**LO 2-6 Calculate the cost of goods manufactured and cost of goods sold.**

* The total manufacturing costs that flow out of the Work in Process Inventory and into Finished Goods Inventory are called cost of goods manufactured. When the product is sold, the total cost is called cost of goods sold and is transferred to the Cost of Goods Sold account.
* Initially, the cost of goods manufactured and the cost of goods sold are based on actual direct materials, actual direct labor, and **applied manufacturing overhead** costs.
* The Cost of Goods Sold account is updated to reflect actual manufacturing overhead costs through an adjustment for overapplied or underapplied manufacturing overhead.

**LO 2-7 Apply job order costing to a service setting.**

* Job order costing is often used by professional service firms that provide unique services to clients with different needs. Examples include accounting firms, law firms, architectural firms, and health care providers.
* Just like manufacturing firms, service firms will charge direct costs of labor and materials to specific client accounts. Indirect costs must be assigned to clients using a cost driver, or allocation base, such as billable hours (for an accounting firm) or patient days (for a hospital).
* Although job costing works essentially the same in a service setting as it does in a manufacturing setting, language and terminology differ, as do the types of allocation bases used to assign indirect costs to customers.

**LO2-S1 Prepare journal entries to record manufacturing and nonmanufacturing costs in a job order cost system.**

* Journal entries can be used to record the flow of manufacturing costs through the Raw Materials Inventory, Work in Process Inventory, Finished Goods Inventory, and Cost of Goods Sold accounts.
* Actual direct materials and actual direct labor are recorded as debits to the Work in Process Inventory account, with a credit to Raw Materials Inventory or Cash/Wages Payable.
* Applied manufacturing overhead costs are recorded with a debit to the Work in Process Inventory account and a credit to the Manufacturing Overhead account.
* Actual manufacturing overhead costs are recorded with a debit to the Manufacturing Overhead account and a credit to the appropriate balance sheet account.
* The balance in the Manufacturing Overhead account represents overapplied or underapplied overhead. A debit balance means that actual overhead costs were greater than applied, or that overhead was underapplied. A credit balance means that applied overhead was greater than actual, or that overhead was overapplied.
* When jobs are completed, Finished Goods Inventory is debited, with a credit to Work in Process Inventory. When a job is sold, Cost of Goods Sold is debited and Finished Goods Inventory is credited.
* Nonmanufacturing costs, or period costs, are recorded in expense accounts during the period incurred.

| **Chapter Outline** | **Teaching Notes** |
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| 1. Job Order versus Process Costing   ***LO 2-1 - Describe the key differences between job order costing and process costing.***   1. Process costing is used by companies that make standardized or homogeneous products or services. 2. Because each unit is the same, there is no need to track the cost of each unit individually. 3. Process costing breaks the production process down into its basic steps, or processes, and then averages the total cost of the process over the number of units produced. 4. Job order costing is used in companies that offer customized or unique products or services. 5. Unlike process costing, in which each unit is identical to the next, job order costing is used for situations in which each unit or customer tends to be different from the next. 6. Job order costing is also common in service industries that serve clients or customers with unique needs. 7. The key difference between job order costing and process costing is whether the company’s products or services are heterogeneous (different) or homogeneous (similar). 8. Job order costing relates to: 9. Unique products and services, such as a custom-built ship. 10. Customized to the needs of the customer or client. 11. Costs accumulated by job or customer. 12. Job cost sheet for each unique unit, customer, or job. 13. Process costing relates to: 14. Homogeneous products and services, such as cans of soda. 15. Mass-production of products in series of standardized processes. 16. Costs accumulated by process. 17. Production report for each production process.   3. Some companies use a hybrid system that includes both types.   1. Assigning Manufacturing Costs to Jobs   ***LO 2-2 - Describe the source documents used to track direct materials and direct labor cost to the job cost sheet.***   1. Manufacturing Costs are divided into three different categories: 2. **Direct materials** are the primary materials input that can be directly and conveniently traced to each job. 3. **Direct Labor** is the hands-on work that goes into producing a product or service. 4. **Manufacturing Overhead** includes all other costs of producing a product that cannot be directly or conveniently traced to an individual unit. 5. In a job order cost system, all of the manufacturing costs are recorded on a document called a j**ob cost sheet,** which provides a detailed record of the cost incurred to complete a specific job, including direct materials, direct labor, and applied manufacturing overhead. 6. All that is needed to keep track of the direct costs of specific jobs is a set of records called **source documents**.    1. Before materials can be used on a job, a **material requisition form** – a form that lists the quantity and cost of the direct materials used on a specific job – must be filled out.       1. This form is used to control the physical flow of materials out of inventory and into production.       2. It provides the information needed to record the cost of raw materials in the accounting system.    2. A **direct labor time ticket** is a source document that shows how much time a worker has spent on various jobs each week.   ***LO 2-3 - Calculate a predetermined overhead rate and use it to apply manufacturing overhead cost to jobs.***   1. Unlike direct materials and direct labor, which can be traced to individual jobs using source documents, manufacturing overhead cannot be directly traced to specific jobs.    1. Manufacturing overhead must be assigned to jobs using a predetermined overhead rate and an allocation base.    2. Ideally, the allocation base should be a cost driver, or a measure that explains or influences the amount of manufacturing overhead cost incurred. 2. Before we assign manufacturing overhead cost to jobs, we must first calculate a predetermined overhead rate using our chosen allocation base.    1. The **predetermined overhead rate** is calculated as follows.   *Predetermined overhead rate = Estimated total manufacturing overhead cost ÷ Estimated total cost driver*   * 1. The overhead rate is calculated for an entire year to avoid fluctuations in costs and activity due to seasonality and demand peaks   2. The rate is predetermined because it is based on estimated rather than actual values.  1. Once the predetermined overhead rate has been established, accountants use it to determine how much overhead should be added to each job.    1. The **applied manufacturing overhead** is calculatedby multiplying the predetermined overhead rate by the *actual value* of the cost driver used on the job, as follows.   *Predetermined overhead rate × Actual value of the cost driver for each job = overhead applied to an individual job*   * 1. Because the predetermined overhead is based on estimated data, applied manufacturing overhead is unlikely to be exactly the same as the actual manufacturing overhead cost incurred.   2. Therefore, we need to learn how to record actual manufacturing overhead and account for the difference between actual manufacturing overhead and applied manufacturing overhead later in this chapter.  1. Recording the Flow of Cost in Job Order Costing   ***LO 2-4 - Describe how costs flow through the accounting system in job order costing.***   1. The three inventory accounts that are used to record manufacturing costs follow.   1. **Raw Materials Inventory** represents the cost of materials purchased from suppliers but not yet used in production. This account includes the **direct materials** and the **indirect materials.**  2. **Work in Process Inventory** represents the total cost of jobs that are still in process.  a. Any cost that is added to the Work in Process Inventory account must be also recorded on the individual job cost sheet.  b. The total cost of all jobs in process should be equal to the balance in the Work in Process Inventory.  3. **Finished Goods Inventory** represents the cost of jobs that have been completed but not yet sold. The cost of a job completed remains in the Finished Goods Inventory account until it is sold.   1. Only direct materials and direct labor costs are recorded directly in the Work in Process Inventory account. All indirect or manufacturing overhead costs flow through the Manufacturing Overhead account. 2. The manufacturing overhead account is a temporary holding account used to record actual and applied manufacturing overhead costs.   1. Actual manufacturing overhead costs are accumulated on the debit (left-hand) side of the manufacturing overhead account.  2. The credit (right-hand) side of the manufacturing overhead account shows the amount of manufacturing overhead that is applied to specific jobs based on the predetermined overhead rate.   1. As jobs are produced, the Work in Process inventory account accumulates the direct materials, direct labor, and applied manufacturing overhead for each job. 2. When a job is completed, its total manufacturing cost is transferred out of Work in Process Inventory and into the Finished Goods Inventory account. 3. Once a job has been sold, its total cost is transferred out of Finished Goods Inventory account and into **Cost of Goods Sold**. 4. We use T-accounts to show how manufacturing costs flow through the various inventory accounts in a job order costing system before eventually being recognized as Cost of Goods Sold.   1. **Recording the Purchase and Issue of Materials** –the cost of purchased raw materials is initially recorded in Raw Materials Inventory. Then, the cost of issued raw materials for production will be transferred (debited) to Work in Process Inventory (for direct materials) and Manufacturing Overhead (for indirect materials).   1. **Recording Labor Costs** – if the labor can be traced to a specific job, then the cost is added to the job cost sheet and the Work in Process Inventory account (for direct labor). If the labor cannot be traced to a specific job, then the cost is considered indirect cost and is debited to the Manufacturing Overhead account. 2. **Recording Applied Manufacturing Overhead** – manufacturing overhead is applied based on the predetermined overhead rate. 3. **Transferring Costs to Finished Goods Inventory and Cost of Goods Sold** – the manufacturing cost on the job sheet of the completed job (i.e., cost of goods manufactured) will be transferred from Work in Process Inventory to Finished Goods Inventory. As the finished goods are sold, the cost of goods sold will be transferred from Finished Goods inventory to Cost of Goods Sold. 4. **Recording Actual Manufacturing Overhead Costs** – actual manufacturing overhead costs include the indirect manufacturing costs that cannot be traced to specific jobs. They are debited to the manufacturing overhead account and credited to a balance sheet account such as cash or payables. 5. **Nonmanufacturing costs** are expensed during the period in which they are incurred. 6. Overapplied or Underapplied Manufacturing Overhead   ***LO 2-5 - Calculate and dispose of overapplied or underapplied manufacturing overhead***   1. Calculating Overapplied and Underapplied Manufacturing Overhead 2. The difference between actual and applied manufacturing overhead is called overapplied or underapplied overhead. 3. **Overhead cost is overapplied** if the amount applied (credit side) is greater than the actual overhead (debit side). 4. **Overhead cost is underapplied** if the amount applied (credit side) is less than the actual overhead (debit side). 5. Disposing of Overapplied or Underapplied Manufacturing Overhead 6. The most common method for disposing of the balance in manufacturing overhead is to make a direct adjustment to cost of goods sold. 7. To remove **overapplied overhead,** debit the Manufacturing Overhead account and credit (decrease) the Cost of Goods Sold account. 8. To remove **underapplied overhead** credit Manufacturing Overhead and debit (increase) the Cost of Goods Sold account.   ***LO 2-6 - Calculate the Cost of Goods Manufactured and Cost of Goods Sold.***   1. Preparing the Cost of Goods Manufactured Report – the total cost that is transferred out of Work in Process Inventory and into Finished Goods Inventory is called **cost of goods manufactured** or cost of goods completed. 2. Calculation of cost of goods manufactured is as follows.   Beginning raw materials inventory  + Raw materials purchased  - Indirect raw materials  - Ending raw materials inventory  = **Direct materials used**  + **Direct labor**  + **Manufacturing overhead applied**  = Total current manufacturing costs  + Beginning work in process inventory  - Ending work in process inventory  = **Cost of goods manufactured**   1. Calculation of cost of goods sold is as follows.   Beginning finished goods inventory  + Cost of goods manufactured  - Ending finished goods inventory  = Unadjusted cost of goods sold  +/- Underapplied manufacturing overhead / Overapplied manufacturing overhead  = Adjusted cost of goods sold  ***LO 2-7 - Applying job order costing to a service setting***  D. Many professional service firms use job order costing to track the time and resources used to service specific clients or accounts.  1. Direct costs such as hours spent on a client’s account and supplies or other expenses incurred directly for the client are assigned to the client’s account by the accounting system.  2. Indirect costs are treated much like manufacturing overhead, i.e., they are accumulated and assigned to clients based on an allocation base.  ***LO 2-S1 – Prepare journal entries to record manufacturing and nonmanufacturing costs in a job order cost system.***   1. Recording the purchase and issue of materials.    1. The journal entry to record the purchase of raw materials follows.   *Dr. Raw Materials Inventory XXXX*  *Cr. Accounts Payable XXXX*   * 1. The journal entry to record the issuance of direct and indirect materials follows.   *Dr. Work in Process Inventory XXXX*  *Dr. Manufacturing Overhead XXXX*  *Cr. Raw Materials Inventory XXXX*   1. Recording labor cost.   The journal entry to record the direct and indirect labor follows.  *Dr. Work in Process Inventory XXXX*  *Dr. Manufacturing Overhead XXXX*  *Cr. Wages Payable XXXX*   1. Recording applied manufacturing overhead.   The journal entry to record the applied manufacturing overhead follows.  *Dr. Work in Process Inventory XXXX*  *Cr. Manufacturing overhead XXXX*   1. Transferring costs to Finished Goods Inventory and Cost of Goods Sold.    * 1. The journal entry to record transferring costs to Finished Goods Inventory follows.   *Dr. Finished Goods Inventory XXXX*  *Cr. Work in Process Inventory XXXX*   * + 1. The journal entry to record transfer from Finished Goods Inventory to Cost of Goods Sold follows.   *Dr. Finished Goods Inventory XXXX*  *Cr. Cost of goods sold XXXX*   1. Recording actual manufacturing overhead.   The combined journal entry to record all actual manufacturing overhead, such as wages, taxes, insurance, depreciation, is as follows.  *Dr. Manufacturing Overhead XXXX*  *Cr. Cash XXXX*  *Cr. Wages Payable XXXX*  *Cr. Taxes Payable XXXX*  *Cr. Prepaid Insurance XXXX*  *Cr. Accumulated Depreciation XXXX*   1. Recording nonmanufacturing costs.   Example: The journal entries to record nonmanufacturing costs are as follows.  *Dr. Commission Expense XXXX*  *Cr. Cash or Commission Payable XXXX*  *Dr. Advertising Expense XXXX*  *Cr. Cash, Prepaid Advertising, or Payable XXXX*  *Dr. Depreciation Expense XXXX*  *Cr. Accumulated Depreciation XXXX*  *Dr. Salaries and administrative Expense XXXX*  *Cr. Cash, Prepaids, or Payables XXXX*   1. Overapplied or underapplied manufacturing overhead:   *Dr. Cost of goods sold XXXX*  *Cr. Manufacturing overhead XXXX* | **Exhibit 2.1**  Examples:  Beverage, toilet tissue, petroleum products  Custom-built home  Service Industries such as accounting and law firms  **Handout 2-1**  *Urge students to complete the* ***Self-Study Practice*** *for LO 2-1.*  **Exhibit 2.2**  Examples: to build a home  Concrete, lumber, fixtures  Installing the plumbing  Cost of site supervision, depreciation on equipment  **Handout 2-2**  **Handout 2-3**  Example:  The number of students is the cost driver for the cost of class handouts.  *Ensure that students understand why it is necessary to estimate and assign the manufacturing overhead.*  *Emphasize that the predetermined overhead rate calculation uses estimated amounts rather than actual amounts in the ratio.*  *Urge students to complete the* ***Self-Study Practice*** *for LO 3.*  **Exhibit 2.3**  **Handout 2-4**  **Exhibit 2.4**  **Exhibit 2.5**  **Exhibit 2.6**  **Exhibit 2.7**  **Exhibit 2.8**  **Exhibit 2.9**  **Handout 2-3**  *Use T-account of Manufacturing Overhead to explain the concept.*  **Exhibit 2.10**  *Urge students to complete the* ***Self-Study Practice*** *for LO 5.*  **Exhibit 2.11**  **Handout 2-5**  *Encourage students to study the terms in this chapter and complete the Demonstration Case at the end of the chapter.* |

**Supplemental Enrichment Activities**

Note: These activities would be suitable for individual or group activities in class.

* **Handout 2-1** (LO 2-1) is designed to ensure that students understand the linkage between products and different costing systems.
* **Handout 2–2** (LO 2- 2) is designed to ensure that students understand how to assign different costs to different manufacturing cost categories. The knowledge they learn here is important for understanding the concepts of cost flows (LO 2-4).
* **Handout 2-3** (LO’s 2-3 and 2-5) is designed to ensure that students know how to calculate a predetermined overhead rate and use this information to figure out the applied manufacturing overhead. Also, students are asked to calculate underapplied or overapplied manufacturing overhead.
* **Handout 2-4** (LO 2- 4) is designed to ensure that students understand the cost flows.
* **Handout 2-5** (LO 2-6) is designed to ensure that students are able to calculate the cost of goods manufactured and the cost of goods sold using the provided information.

**Handout 2-1** (LO2-1)

Enter the letter (X) next to the descriptions of products, jobs or services under the column for either using job order costing or process costing in production.

|  |  |  |
| --- | --- | --- |
| Descriptions | Job Order Costing | Process Costing |
| 1. Customized home |  |  |
| 1. Auto repair |  |  |
| 1. Accounting firm |  |  |
| 1. Beverage |  |  |
| 1. Small Appliance |  |  |
| 1. Lawn service |  |  |
| 1. Hollywood movie |  |  |
| 1. Gasoline |  |  |
| 1. Attorney service |  |  |
| 1. Computer mouse |  |  |
| 1. Submarine built for U.S. Department of Defense |  |  |
| 1. Light bulb |  |  |

**Solution:**

|  |  |  |
| --- | --- | --- |
| Descriptions | Job Order Costing | Process Costing |
| 1. Customized home | X |  |
| 1. Auto repair | X |  |
| 1. Accounting firm | X |  |
| 1. Beverage |  | X |
| 1. Small Appliance |  | X |
| 1. Lawn service | X |  |
| 1. Hollywood movie | X |  |
| 1. Gasoline |  | X |
| 1. Attorney service | X |  |
| 1. Computer mouse |  | X |
| 1. Submarine built for U.S. Department of Defense | X |  |
| 1. Light bulb |  | X |

**Handout 2-2** (LO2-2)

1. Direct Materials
2. Direct Labor
3. Manufacturing Overhead
4. Nonmanufacturing Cost

Classify the following costs into one of the above four categories:

1. \_\_\_\_\_\_ Salaries of site supervisors
2. \_\_\_\_\_\_ Fixture used in building home
3. \_\_\_\_\_\_ Depreciation of equipment used in production
4. \_\_\_\_\_\_ Depreciation of headquarter building
5. \_\_\_\_\_\_ Glue used in assembling wooden tables
6. \_\_\_\_\_\_ Utilities cost of the factory
7. \_\_\_\_\_\_ Compensation of the CEO
8. \_\_\_\_\_\_ Wages of workers framing the home
9. \_\_\_\_\_\_ Utilities cost of the building for administration
10. \_\_\_\_\_\_ Hard disks used for building laptop computers

**Solution:**

1. C 2. A 3. C 4. D 5. C

6. C 7. D 8. B 9. D 10. A

**Handout 2-3** (LO’s 2-3 and 2-5)

Leo, Inc. expects to assemble 20,000 units of laptop computers this coming month. The amount of manufacturing overhead incurred this coming month is estimated to be $1,100,000. The number of direct labor hours is estimated to be 4,000 hours. Leo, Inc. is currently using direct labor hours as the single allocation base to apply manufacturing overhead to the jobs. Leo, Inc. receives a job order which requires labor work of 200 hours. Answer the following questions.

1. Calculate the predetermined overhead rate used to apply manufacturing overhead.
2. Based on your answer in (1), calculate how much of manufactured overhead should be applied to this specific order.
3. The amount of *actual* manufacturing overhead incurred equals $1,200,000 at the end of this month. The amount of *applied* manufacturing overhead during this month is $1,050,000. Calculate the overapplied or underapplied manufacturing overhead.
4. Indicate how to dispose of the overapplied or underapplied manufacturing overhead.

**Solution:**

1. Predetermined overhead rate = Estimated manufacturing overhead ÷ Estimated allocation base

= $1,100,000 ÷ 4,000 direct labor hours = $275 per direct labor hours (DLH).

1. Applied manufacturing overhead = Predetermined overhead rate × actual value of allocation base = $275 per DLH × 200 DLHs = $55,000
2. Since the applied manufacturing overhead is less than (or under) the actual manufacturing overhead, the difference $150,000 ($1,200,000 - $1,050,000) represents the underapplied manufacturing overhead.
3. Since we have underapplied overhead, we need to apply (or add) more overhead to fix the problem. Underapplied overhead is represented by a debit ending balance on the Manufacturing Overhead account because the applied manufacturing overhead (credit side) is less than the actual manufacturing overhead (debit side). In order to dispose of the underapplied manufacturing overhead, we will increase (debit) the Cost of Goods Sold account and decrease (credit) the Manufacturing Overhead account. The Manufacturing Overhead account will have a zero balance after we dispose of the underapplied manufacturing overhead.

**Handout 2-4** (LO 2-4)

Answer as True or False. If the answer is False, change the statement to make it True.

1. \_\_\_\_ If raw materials used can be traced conveniently to a specific job, it should be assigned to Work in Process Inventory and removed from Raw Materials Inventory.
2. \_\_\_\_ When labor costs are incurred, direct labor is added (debited) to Manufacturing Overhead account.
3. \_\_\_\_ The left side of Manufacturing Overhead Inventory account represents the actual manufacturing overhead incurred.
4. \_\_\_\_ Work in Process Inventory accumulates the direct materials, direct labor, and the *applied* manufacturing overhead cost for each job.
5. ­­­­\_\_\_\_ Manufacturing Overhead account is credited as manufacturing overhead is applied to Work in Process Inventory.
6. \_\_\_\_ Once a job has been sold, its total cost is transferred out of Finished Goods Inventory to Cost of Goods Sold.
7. \_\_\_\_ Actual manufacturing overhead costs include all of the indirect manufacturing costs incurred but that cannot be traced to the specific jobs.
8. \_\_\_\_ If a job is completed, its total manufacturing cost is transferred out of Finished Goods Inventory and assigned to Work in Process Inventory.
9. \_\_\_\_ Raw Materials Inventory, Work in Process Inventory, and Finished Goods accounts are available on the income statement.
10. \_\_\_\_ Cost of goods manufactured represents the cost of goods completed during the accounting period.

**Solution:**

1. \_\_**T**\_\_ If raw materials used can be traced conveniently to a specific job, it should be assigned to Work in Process Inventory and removed from Raw Materials Inventory.
2. \_\_**F**\_\_When labor costs are incurred, direct labor is added (debited) to Manufacturing Overhead account.

Correct Statement:

*Direct labor is added (debited) to Work in Process account.*

1. \_\_**T\_\_** The left side of Manufacturing Overhead Inventory account represents the actual manufacturing overhead incurred.
2. \_\_**T**\_\_ Work in Process Inventory accumulates the direct materials, direct labor, and the *applied* manufacturing overhead cost for each job.
3. ­­­­\_\_**T**\_\_ Manufacturing Overhead account is credited as manufacturing overhead is applied to Work in Process Inventory.
4. \_\_**T**\_\_ Once a job has been sold, its total cost is transferred out of Finished Goods Inventory to Cost of Goods Sold.
5. \_\_**T\_\_** Actual manufacturing overhead costs include all of the indirect manufacturing costs incurred but that cannot be traced to the specific jobs.
6. \_\_**F**\_\_ If a job is completed, its total manufacturing cost is transferred out of Finished Goods Inventory and assigned to Work in Process Inventory.

Correct Statement:

*If a job is completed, its total manufacturing cost is transferred out of Work in Process Inventory and assigned to Finished Goods Inventory.*

1. \_\_**F**\_\_ Raw Materials Inventory, Work in Process Inventory, and Finished Goods accounts are available on the income statement.

Correct Statement:

*Raw Materials Inventory, Work in Process Inventory, and Finished Goods accounts are available on the balance sheet.*

1. \_\_**T**\_\_ Cost of goods manufactured represents the cost of goods completed during the accounting period.

**Handout 2-5** (LO 2-6)

The accounting information of Leo, Inc. in May is as follows.

Beginning Raw Materials $1,000

Ending Raw Materials 1,500

Purchase of Raw Materials 2,000

Beginning Work in Process 3,000

Ending Work in Process 2,000

Beginning Finished Goods 3,000

Ending Finished Goods 2,000

Direct Labor 2,000

Manufacturing overhead applied 1,500

Answer the following questions:

1. Calculate the cost of raw materials used in production during May.
2. Calculate total current manufacturing costs for the month of May assuming that all raw materials used are direct materials.
3. Calculate cost of goods manufactured for the month of May.
4. Calculate the unadjusted cost of goods sold for the month of May.
5. If actual manufacturing overhead incurred equals $2,000, indicate the amount of underapplied or overapplied overhead at the end of May.
6. Calculate the adjusted cost of goods sold after you remove the underapplied or overapplied overhead.

**Solution:**

Beginning Raw Materials $1,000

+ Purchase of Raw Materials 2,000

- Ending Raw Materials 1,500

= Raw Materials used 1,500

- Indirect Materials 0

= Direct Materials 1,500

Total current manufacturing cost = direct materials used + direct labor + applied manufacturing overhead= $1,500 + $2,000 + $1,500 = $5,000.

Beginning Work in Process $3,000

+ Total current manufacturing costs 5,000

- Ending Work in Process 2,000

= Cost of Goods Manufactured 6,000

Beginning Finished Goods 3,000

+ Cost of Goods Manufactured 6,000

- Ending Finished Goods 2,000

= Unadjusted Cost of Goods Sold 7,000

Underapplied manufacturing overhead = Actual manufacturing overhead – Applied manufacturing overhead = $2,000 - $1,500 = $500.

Adjusted cost of goods sold = unadjusted cost of goods sold + Underapplied manufacturing overhead = $7,000 – $500 = $7,500.