

National University- Sudan

Academic Year: 2019 \ 2020

Faculty: Administrative Sciences. Accounting specialty

Batch No: 10

Course Title: Cost accounting

Course code: ACCT-227

Course Coordinator: Name: Dr: Shima Badr Hofi

Tel: 0912580056 – 0912206533

Email: - shimabadr87@gmail.com

Cost Accounting

Unit 1 : Introduction to Cost Accounting

- 1. Meaning of Cost and Cost Accounting**
- 2. Objectives of Cost Accounting**
- 3. Cost Terminology**
- 4. Classification of Costs and Calculation of Various Cost.**
- 5. 4. Home Assignment**

Cost - Meaning

Cost means the amount of expenditure (actual or notional) incurred on, or attributable to, a given thing.

Cost accounting meaning

Cost accounting is concerned with recording, classifying and summarizing costs for determination of costs of products or services, planning, controlling and reducing such costs and furnishing of information to management for decision making

OBJECTIVES OF COST ACCOUNTING

- Ascertainment of costs التاكيد
- Estimation of costs تقدير
- Cost control

- Cost reduction
- Determining selling price
- Facilitating preparation of financial and other statement
- Providing basis for operating policy

COST TERMINOLOGY

- **COST:** Cost means the amount of expenditure incurred on a particular thing.
- **COSTING:** Costing means the process of ascertainment of costs. التحقق
- **COST ACCOUNTING:** The application of cost control methods and the ascertainment of the profitability of activities carried out or planned” المنفذه.
- **COST CONTROL:** Cost control means the control of costs by management. Following are the stages of cost control.
- **JOB COSTING:** It helps in finding out the cost of production of every order and thus helps in ascertaining profit or loss made out on its execution. The management can judge the profitability of each job and decide its future courses of action.

BATCH COSTING: Batch costing production is done in batches and each batch consists of a number of units, the determination of optimum quantity to constitute an economical batch is all the more important

Element of cost

1\ Materials (direct , indirect)

2\ Labour (direct, indirect)

3\ Expenses (direct, indirect)

MATERIAL: The substance from which the finished product is made is known as material.

(a) DIRECT MATERIAL: is one which can be directly or easily identified in the product Eg: Timber in furniture, Cloth in dress, etc.

(b) INDIRECT MATERIAL: one which cannot be easily identified in the product.

EXAMPLES OF INDIRECT MATERIAL

At factory level – lubricants, oil, consumables, etc. التشحيم / البترول /
المواد المستهلكة

At office level – Printing & stationery, Brooms, Dusters, etc.

At selling & dist. level – Packing materials, printing & stationery, etc.

LABOUR: *The human effort required to convert the materials into finished product is called labour.*

(a) DIRECT LABOUR: is one which can be conveniently identified or attributed wholly to a particular job, product or process.

The labor of employees who work directly on the product

manufactured, such as machine operators

Eg: wages paid to carpenter, fees paid to tailor, etc .

(b) INDIRECT LABOUR: is one which cannot be conveniently identified or attributed wholly to a particular job, product or process.

The employees who are required for the manufacturing process but who do not work directly on the units being manufactured are considered indirect labor

EXAMPLES OF INDIRECT LABOUR

At factory level – foremen’s salary, works manager’s salary, gate keeper’s salary, etc

At office level – Accountant’s salary, GM’s salary, Manager’s salary, etc.

At selling and dist.level – salesmen salaries, Logistics manager salary, etc.

Factory Overhead

also known as manufacturing overhead includes all costs related to the manufacture of a product except direct materials and direct labor.

DIRECT EXPENSES: are those expenses which can be directly allocated to particular job, process or product. Eg :, royalty, special hire charges, etc.

INDIRECT EXPENSES: are those expenses which cannot be directly allocated to particular job, process or product

Examples of other expenses

At factory level : factory rent, factory insurance, lighting, etc.

At office level : office rent, office insurance, office lighting, etc.

At sales & dist. level : advertising, show room expenses like rent, insurance, etc

BASIC COST SHEET

DIRECT MATERIAL	.....
DIRECT LABOUR	.....
DIRECT EXPENSES	.....
PRIME COST	.....
FACTORY OVERHEADS	.....
FACTORY COST	.....
OFFICE OVERHEADS	.....
COST OF PRODUCTION	.....
SELL & DIST OVERHEADS	.....
COST OF SALES	.....
<u>PROFIT</u>	<u>.....</u>

SALES

COST SHEET – ADVANCED

OPENING STOCK OF RAW MATERIALS

+PURCHASES

+CARRIAGE INWARDS

-CLOSING STOCK OF RAW MATERIALS

VALUE OF MATERIALS CONSUMED

+DIRECT WAGES

+DIRECT EXPENSES

PRIME COST

+FACTORY OVERHEADS

+OPENING STOCK OF WIP

-CLOSING STOCK OF WIP

FACTORY COST

+ADMINISTRATIVE OVERHEADS

COST OF PRODUCTION

+OPENING STOCK OF FINISHED GOODS

-CLOSING STOCK OF FINISHED GOODS

COST OF GOODS SOLD

+SELL. & DIST. OVERHEADS

COST OF SALES

+PROFIT

SALES

COST CLASSIFICATION

Classification On basis of:

- **Nature**
- **Function**
- **Direct & indirect**
- **Variability**
- **Controllability**
- **Normality**
- **Financial accounting classification**
- **Time**
- **Planning and control**

Managerial decision making

ON THE BASIS OF NATURE

- **Materials**
- **Labor**
- **Expenses**

ON THE BASIS OF FUNCTION

- **Manufacturing costs**
- **Commercial costs – ADM and S&D Costs**

ON THE BASIS OF DIRECT AND INDIRECT

- **Direct costs**
- **Indirect costs**

ON THE BASIS OF VARIABILITY

- **Fixed costs**
- **Variable costs**
- **Semi variable costs**

ON THE BASIS OF CONTROLLABILITY

- **Controllable costs**
- **Uncontrollable costs**

ON THE BASIS OF NORMALITY

- **Normal costs**
- **Abnormal costs**

ON THE BASIS OF FINANCIAL ACCOUNTS

- **Capital costs**
- **Revenue costs**

Deferred revenue costs

ON THE BASIS OF TIME:

- **Historical costs**
- **Pre determined costs**

ON THE BASIS OF PLANNING AND CONTROL:

- **Budgeted costs**
- **Standard costs**

ON THE BASIS OF MANAGERIAL DECISION MAKING

- **Marginal costs**
- **Sunk costs**
- **Imputed costs**
- **Opportunity costs**
- **Replacement costs**
- **Avoidable costs**
- **Unavoidable costs**
- **Relevant and irrelevant costs**
- **Differential costs**

TERMS IN COST ACCOUNTING

- **Cost unit**
- **Cost centre**
- **Cost estimation**
- **Cost ascertainment**
- **Cost allocation**
- **Cost apportionment**

➤ **Cost reduction**

➤ **Cost control**

METHODS OF COSTING

➤ **Job costing**

➤ **Contract costing**

➤ **Batch costing**

➤ **Process costing**

➤ **Unit costing**

➤ **Operating costing**

➤ **Operation costing**

➤ **Multiple costing**

TYPES OF COSTING

➤ **Uniform costing**

➤ **Marginal costing**

➤ **Standard costing**

➤ **Historical costing**

➤ **Direct costing**

➤ **Absorption costing**

An Introduction to Cost Terms and Purposes

Define and illustrate

a cost object.

Cost is a resource sacrificed or forgone to achieve a specific objective.

An *actual cost* is the cost incurred (a historical cost) as distinguished from budgeted costs.

A *cost object* is anything for which a separate Measurement of costs is desired.

Distinguish between direct costs and indirect costs.

Direct Costs:-

Example: Paper on which *Sports Illustrated* magazine is printed

Indirect Costs:-

Example: Lease cost for Time-Warner building the senior editors of its magazine

Example:-

Direct Costs:

Maintenance Department	\$40,000
Personnel Department	\$20,600
Assembly Department	\$75,000
Finishing Department	\$55,000

Assume that Maintenance Department costs are allocated equally among the production departments.

How much is allocated to each department?

Explain variable costs and fixed costs.

Cost Behavior Patterns Example:-

Bicycles by the Sea buy a handlebar at \$52 for each of its bicycles.

What is the total handlebar cost when 1,000 bicycles are assembled?

$$1,000 \text{ units} \times \$52 = \$52,000$$

What is the total handlebar cost when 3,500 bicycles are assembled?

$$3,500 \text{ units} \times \$52 = \$182,000$$

Bicycles by the Sea incurred \$94,500 in a given year for the leasing of its plant.

This is an example of fixed costs with

Respect to the number of bicycles assembled what is the leasing (fixed) cost per bicycle

When Bicycles assembles 1,000 bicycles?

$$\text{\$94,500} \div \text{1,000} = \text{\$94.50}$$

What is the leasing (fixed) cost per bicycle when Bicycles assembles 3,500 bicycles?

$$\text{\$94,500} \div \text{3,500} = \text{\$27}$$

Cost Drivers:-

The cost driver of variable costs is the level of activity or volume whose change causes the (variable) costs to change proportionately.

The number of bicycles assembled is a cost driver of the cost of handlebars.

Relevant Range Example:-

Assume that fixed (leasing) costs are \$94,500 for a year and that they remain the same for a certain volume range (1,000 to 5,000 bicycles).

1,000 to 5,000 bicycles is the relevant range

Total Costs and Unit Costs Example:-

What is the unit cost (leasing and handlebars) when Bicycles assembles 1,000 bicycles?

Total fixed cost \$94,500 + Total variable cost \$52,000 = \$146,500

$\$146,500 \div 1,000 = \146.50

Assume that Bicycles management uses a unit cost of \$146.50 (leasing and wheels).

Management is budgeting costs for different levels of production.

What is their budgeted cost for an estimated production of 600 bicycles?

$600 \times \$146.50 = \$87,900$

What is their budgeted cost for an estimated production of 3,500 bicycles?

$3,500 \times \$146.50 = \$512,750$

What should the budgeted cost be for an estimated production of 600 bicycles?

Total fixed cost \$ 94,500

Total variable cost ($\$52 \times 600$) 31,200

Total \$125,700

$\$125,700 \div 600 = \209.50

Using a cost of \$146.50 per unit would underestimate actual total costs if output is below 1,000 units.

What should the budgeted cost be for an estimated production of 3,500 bicycles?

Total fixed cost	\$ 94,500
Total variable cost (52 × 3,500)	<u>182,000</u>
Total	\$276,500

$$\$276,500 \div 3,500 = \$79.00$$

Period costs :- are all costs in the income statement other than cost of goods sold

Period costs are recorded as expenses of the accounting period in which they are incurred.

Flow of Costs Example:-

Bicycles by the Sea had \$50,000 of direct materials inventory at the beginning of the period.

Purchases during the period amounted to \$180,000 and ending inventory was \$30,000.

How much direct materials were used?

$$\$50,000 + \$180,000 - \$30,000 = \$200,000$$

Direct labor costs incurred were \$105,500.

Indirect manufacturing costs were \$194,500.

What are the total manufacturing costs incurred?

Direct materials used	\$200,000
Direct labor	105,500
Indirect manufacturing costs	<u>194,500</u>
Total manufacturing costs	\$500,000

Assume that the work in process inventory at the beginning of the period was \$30, 000, and \$35,000 at the end of the period.

What is the cost of goods manufactured?

Beginning work in process	\$ 30,000
Total manufacturing costs	500,000
Ending work in process	<u>35,000</u>
Cost of goods manufactured	\$495,000

Assume that the finished goods inventory at the beginning of the period was \$10,000, and \$15,000 at the end of the period.

What is the cost of goods sold?

Beginning finished goods	\$ 10,000
Cost of goods manufactured	495,000
Ending finished goods	<u>15,000</u>
Cost of goods sold	\$490,000

**Distinguish among manufacturing companies,
Merchandising companies, and
Service-sector companies.**

Manufacturing companies:-

Purchase materials and components and convert them into finished goods.

A manufacturing company must also develop, design, market, and distribute its products.

Merchandising companies:-

Purchase and then sell tangible products without changing their basic form.

Service companies:-

Provide services or intangible products to their customers.

Labor is the most significant cost category.

Types of Inventory

Manufacturing-sector companies typically have one or more of the following three types of inventories:

- 1- Direct materials inventory**
- 2- Work in process inventory (work in progress)**
- 3- Finished goods inventory**

Merchandising-sector companies hold only one type of inventory – the product in its original purchased form.

Service-sector companies do not hold inventories of tangible products

Classification of Manufacturing Costs:-

- 1- Direct materials costs**
- 2- Direct manufacturing labor costs**
- 3- Indirect manufacturing costs**

Management of inventory Inventory as Money

Because inventory is money, you should care about the financial aspects of inventory?

Accounting for Inventories

As we say before, there are three basic types of inventory:

1. Raw Materials —**raw materials inventory** is made up of goods that will be used in the production of finished products, e.g., nuts, bolts, flour, sugar.

1. Work in Process —**work in process inventory, or WIP**, consists of materials entered into the production process but not yet completed, e.g., subassemblies.

1. Finished Goods —**finished goods inventory** includes completed products waiting to be sold, e.g., bar stools, bread, cookies.

There are three methods used when valuing the goods that you have on hand at the end of the period.

1. The First-In-First-Out Method (FIFO)

First bought first sold

2. The Last-In-First-Out Method (LIFO)

last bought first sold

3. The Weighted Average Cost Method

Example

Mr. Ahmed Mahmoud runs a candy shop. He enters into the following transactions during July:

- July 1 Purchases 1,200 lollipops at \$1 for each one.

- July 13 Purchases 500 lollipops at \$1.20 for each one.

- July 14 Sells 700 lollipops at \$2 for each one. First of all, how many lollipops does he has at the end of the month?

Answer: $1,200 + 500 - 700 = 1,000$ lollipops Now, there are three ways that Mr. Ahmed could value his closing stock:

First-in, First-out (FIFO) This method assumes that the first inventories bought are the first ones to be sold, and that inventories bought later are sold later.

The value of our closing inventories in this example would be calculated as follows:

DATE	DETAILS	NUMBER	\$/UNIT	VALUE
July 1	Purchases 1,200 lollipops at \$1 each.	1,200	\$1	\$1,200
13	Purchases 500 lollipops at \$1.20 each.	1,200	\$1	\$1,200
		<u>500</u>	<u>\$1.20</u>	<u>\$ 600</u>
		1,700	n/a	\$1,800
14	Sells 700 lollipops at \$2 each.	500	\$1	\$500
		<u>500</u>	<u>\$1.20</u>	<u>\$600</u>
		1,000	n/a	\$1,100

Using the First-In-First-Out method, our closing inventory comes to \$1,100. This equates to a cost of \$1.10 per lollypop ($\$1,100/1,000$ lollipops).

It is very common to use the FIFO method if one trades in foodstuffs and other goods that have a limited shelf life, because the oldest goods need to be sold before they pass their sell-by date.

The FIFO is probably the most commonly used method in small business

2. Last-in, First-out (LIFO) This method assumes that the last inventories bought are the first ones to be sold, and that inventories bought first are sold last.

The value of our closing inventories in this example would be calculated as follows:

DATE	DETAILS	NUMBER	\$/UNIT	VALUE
July 1	Purchases 1,200 lollypops at \$1 each.	1,200	\$1	\$1,200
13	Purchases 500 lollypops at \$1.20 each.	1,200	\$1	\$1,200
		<u>500</u>	<u>\$1.20</u>	<u>\$ 600</u>
		1,700	n/a	\$1,800
14	Sells 700 lollypops at \$2 each.	1,000	\$1	\$1,000
		<u>0</u>	<u>\$1.20</u>	<u>\$ 0</u>
		1,000	n/a	\$1,000

Using the Last-In-First-Out method, our closing inventory comes to \$1,000. This equates to a cost of \$1.00 per lollypop (\$1,000/1,000 lollypops).

The LIFO method is commonly used in the U.S.A.

3. The Weighted Average Cost Method: This method assumes that we sell all our inventories simultaneously.

Identifies the value of inventory and cost of goods sold by calculating an average unit cost for all goods available for sale during a given period of time.

This valuation method assumes that ending inventory consists of all goods available for sale.

Average Cost = Total Cost of Goods ÷ Total Quantity of Goods Available for Sale

DATE	DETAILS	NUMBER	\$/UNIT	VALUE
July 1	Purchases 1,200 lollypops at \$1 each.	1,200	\$1	\$1,200
13	Purchases 500 lollypops at \$1.20 each.	1,200	\$1	\$1,200
		<u>500</u>	<u>\$1.20</u>	<u>\$ 600</u>
		1,700		\$1,800

Therefore, the average cost per lollypop is \$1,800/1,700 lollypops, which comes to \$1.06.

		<u>1,700</u>	<u>\$1.06</u>	<u>\$1,800</u>
14	Sells 700 lollypops at \$2 each.	<u>1,000</u>	<u>\$1.06</u>	<u>\$1,059</u>

Using the weighted average cost method, our closing inventory amounts to \$1,059. This equates to a cost of \$1.06 per lollypop ($\$1,059/1,000$ lollypops).

The weighted average cost method is most commonly used in manufacturing businesses

Where inventories are mixed together and cannot be differentiated, such as chemicals, oils, etc.

The LIFO method is the preferred inventory valuation method in the United States but is disallowed in non-US countries.

The FIFO method and the weighted average cost method are used in non-US countries.

FIFO vs. LIFO vs. Average Cost Method of Inventory Valuation

Assume the following inventory events:

November 5 Purchased 800 widgets at \$10/unit—Total cost \$8,000

November 7 Purchased 300 widgets at \$11/unit—Total cost \$3,300

November 8 Purchased 320 widgets at \$12.25/unit—Total cost \$3,920

November 15 Purchased 200 widgets at \$14.7/unit—Total cost \$2,940

November 10 Sold 750 units of goods at \$15/unit

November 14 Sold 460 units of goods at \$15.55/unit

November 18 Sold 220 units of goods at \$14.45/unit

Date	Units Purchased		
	#Units	Cost/Unit	Total Cost
11/5	800	\$10.00	\$8,000
11/7	300	11.00	3,300
11/8	320	12.25	3,920
11/15	200	14.70	2,940
Total	1,620	N/A	\$18,160

Date	Units Sold		
	#Units	Cost/Unit	Total Cost
11/10	750	Varies By Valuation Method	
11/14	460		
11/18	220		
Total	1,430	N/A	N/A

FIFO

Transactions	Quantity	Price	Inventory
Purchased#1	800	10	
Purchased#2	300	11	
Purchased#3	320	12.25	
Purchased#4	200	14.7	
			18160
Sold#1	750		
Purchased#1	50	10	
Purchased#2	300	11	
Purchased#3	320	12.25	
Purchased#4	200	14.7	
			10660
Sold#2	460		
Purchased#1	0	10	
Purchased#2	0	11	
Purchased#3	210	12.25	
Purchased#4	200	14.7	
			5512.5
Sold#3	220		
Purchased#1	0	10	
Purchased#2	0	11	
Purchased#3	0	12.25	
Purchased#4	190	14.7	
			2793

LIFO

	Transactions	Quantity	Price	Inventory
	Purchased#1	800	10	
	Purchased#2	300	11	
	Purchased#3	320	12.25	
	Purchased#4	200	14.7	
				18160
	Sold#1	750		
	Purchased#1	800	10	
	Purchased#2	70	11	
	Purchased#3	0	12.25	
	Purchased#4	0	14.7	
				8770
	Sold#2	460		
	Purchased#1	410	10	
	Purchased#2	0	11	
	Purchased#3	0	12.25	
	Purchased#4	0	14.7	
				4100
90	Sold#3	220		
	Purchased#1	190	10	
	Purchased#2	0	11	
	Purchased#3	0	12.25	
	Purchased#4	0	14.7	
				1900

The Weighted Average Cost Method

Transactions	Quantity	Price	Value
Purchased#1	800	10	
Purchased#2	300	11	
Purchased#3	320	12.25	
Purchased#4	200	14.7	
Total Purchased	1620		18160
Sold#1	750		
Sold#2	460		
Sold#3	220		
Total Sold	1430		
Net Inv.	190		
Average price	11.21		
Inventory	2130		

Average Cost	= Total Cost of Goods Available for Sale	+ Total Quantity of Goods Available for Sale
	= \$18,160	+ 1,620 units
	= \$11.21/unit	

Calculating the Cost of Goods Sold:-

	FIFO	LIFO	Avg Cost Method
Cost of Goods Purchased	\$18,160	\$18,160	\$18,160
Minus: Ending Inventory	2,793	1,900	2,130
Cost of Goods Sold	\$15,367	\$16,260	\$16,030

Assignment

Jan. 1	Beginning Inventory	200	Units @ \$10	\$2,000
Mar. 14	Purchase	350	Units @ \$15	5,250
Jul. 30	Purchase	450	Units @ \$20	9,000
Oct. 26	Purchase	700	Units @ \$25	17,500

Said resold its products at \$40 per unit on the following dates:	Sales	100	units
Jan. 10			
Mar. 15	Sales	150	units
Oct. 5	Sales	310	units
Total Sales		560	units

Labour cost

This chapter covers...

In Chapter 1 we saw how costs can be classified by element as materials, labour and expenses. In this chapter we focus on labour costs and explain:

- The factors that affect labour costs
- The methods by which the direct labour employees of a business can be paid
- How payroll information is gathered
- Actual time overtime, and idle time
- The use of a time sheet to calculate gross wages
- The bookkeeping entries for labour costs

Labour costs

Before taking on labour, a business must decide how to calculate gross pay for its employees. Labour payment methods are looked at in detail on the next page. Wages are usually calculated according to time worked or work done, or a combination of both. Usually paid on a weekly or monthly basis. Such wages and salaries – classed as indirect labour costs – may be increased by bonus payments; for example,:-

A sales staff, a profit-sharing scheme for all employees.

Labor costs are one of the highest expenses that most businesses contend with. Only rent and mortgage payments rank higher.

In fact, in the restaurant business, labor costs can average 30-35 percent of total revenue. That's a large sum of money leaving your business each year. In addition, labor costs count heavily

when determining your prime cost (cost of goods sold plus labor costs), which is a key metric for efficiency.

But what are labor costs, exactly? How do you calculate them? And how can you streamline the management of your labor costs so you have time to grow your business?

The experts at Sling will answer those questions and show you an easy way to lower your labor costs so you can keep your business on the road to success.

What Are Labor Costs?

At first glance, labor costs may seem like just hourly or salaried wages. But in actual fact, labor costs include such expenses as:

- Payroll taxes
- Overtime
- Health care
- Bonuses
- Sick days
- Vacation days
- Insurance
- Benefits
- Meals
- Supplies
- Training costs

Basically, consider anything even remotely related to employee wages as a labor cost.

What that means for you, then, is that while you may pay your servers \$15 per hour, your actual labor costs are much higher because you have to factor in all the other expenses. Here's how to calculate your fully burdened labor cost.

LABOUR PAYMENT METHODS

Direct labour cost is the wages paid to those who work on a production line, are involved in assembly, or are involved in the output of a service business.

The three main payment methods for direct labour are:

Time rate Time rate, or basic pay, is where the employee is paid on the basis of time spent at work. Overtime is often paid for hours worked beyond a standard number of hours, or for work carried out on days which are not part of the working week, e.g. Saturdays or Sundays. Overtime is often paid at rates such as 'time-and-a-quarter', 'time and- a-half', or 'double-time'. 'Time-and-a-half', for example, means that 1.5 times the basic hourly rate is paid.

Time rate is often referred to as a 'day rate'. **piecework rate** the employee is paid an agreed sum for each task carried out or for each unit of output completed. Units of output can be based on an agreed output per hour, which is referred to as 'standard hour produced'.

In some cases, employees may have a guaranteed
Minimum wage.

Bonus system the employee is paid a time rate and then receives a bonus if output is better than expected when comparing the time allowed with the time taken. The bonus is calculated as an agreed percentage of the time saved multiplied by the time rate. Bonus systems base employees' earnings on a combination of time taken and work done.

Most other employees, e.g. factory supervisors, sales staff, office staff.

Calculating Labor Costs

For this explanation, we'll set up a hypothetical employee with the following details:

- Works full time
- Paid hourly
- Pay rate equals \$15 per hour

This example only deals with one employee, but you can scale it up to accommodate as many employees as you have.

Now we'll use the above information to calculate labor costs.

1) Determine Gross Pay

When an employee works full time, they will potentially work 2,080 hours in one year (40 hours x 52 weeks).

So you'll start with this equation:

$$\text{Gross Pay} = \text{Pay Rate} \times \text{Gross Hours}$$

$$\text{Gross Pay} = \$15/\text{hour} \times 2,080 \text{ hours}$$

$$\text{Gross Pay} = \mathbf{\$31,200}$$

2) Calculate Hours Not Worked And Net Hours Worked

You'll never know exactly how many times an employee will be absent, but you can hazard a pretty good guess. If you have past records for other employees, average their absentee numbers together and apply that number to a new employee.

Let's say you come up with an average of 10 days lost because of holidays, vacation, and illness. Convert that estimate to hours with the following equation:

$$\text{Hours Not Worked} = 10 \text{ days} \times 8 \text{ hours}$$

$$\text{Hours Not Worked} = 80$$

Now subtract those hours not worked from the total hours worked from the first step (2,080).

$$\text{Net Hours Worked} = \text{Gross Hours} - \text{Hours Not Worked}$$

$$\text{Net Hours Worked} = 2,080 - 80$$

$$\text{Net Hours Worked} = 2,000$$

3) Add Other Annual Costs

Remember, labor costs include expenses other than just wages. Insurance, bonuses, taxes — all of these items have an impact on what you pay your employees. Here's how we'll break it down for this example:

- Insurance \$500
- Taxes \$500
- Overtime \$1,000
- Benefits \$1,500
- Supplies \$500

Add those numbers together and you get \$4,000 in additional expenses associated with your employee's labor. Take that number and add it to your employee's gross pay to determine annual payroll labor cost.

Annual Payroll Labor Cost = Gross Pay + Other Annual Costs

Annual Payroll Labor Cost = \$31,200 + \$4,000

Annual Payroll Labor Cost = \$35,200

That's how much you're actually paying out for your employee to work every year.

4) Calculate Actual Hourly Labor Cost

You know your employee's base pay rate (\$15 per hour in this example), but it's essential that you calculate their actual hourly labor cost using this formula:

Actual Hourly Labor Cost = Annual Payroll Labor Cost / Net Hours Worked

Actual Hourly Labor Cost = \$35,200 / 2,000

Actual Hourly Labor Cost = \$17.60 per hour

That number tells you that when all the other variables are factored in, you're paying your employee \$17.60 per hour of actual work.

OVERTIME, IDLE TIME AND EQUIVALENT UNITS

In Chapter 1 we divided labour costs between:

- Direct costs, labour costs of production-line employees
- Indirect costs, labour costs of other employees, such as supervisors, office staff, etc

Whilst this distinction appears clear enough, there are times when a proportion of the labour costs of production-line employees is classed as an indirect cost (rather than a direct cost) and is included amongst the overheads of the business. This is done if part of the cost of wages of the direct workers cannot be linked to specific work.

Overtime payments and overtime premium

When production-line employees work overtime they are usually paid at a rate above the time rate. For example, overtime might be paid at 'time-and a-half'; thus an employee with a time rate of £12 an hour will receive overtime payments of £18 an hour. The additional £6 per hour is called overtime premium. For normal cost accounting purposes, any overtime worked is charged at £12 an hour to direct labour, and £6 an hour to indirect labour.

Example:

A group of employees on a production line have a working week consisting of 35 hours each. Anything over that time is paid at time-and-a-half. One employee has worked 40 hours during the week at a normal rate of £10.

- direct wages cost is 40 hours at £10 = £400
- overtime premium is 5 hours at £5 (half of £10) = £25, which is charged to indirect labour
- total wages cost £425 (35 hours at £10, plus 5 hours at £15)

The overtime premium is spread across all output and is not charged solely to the output being worked on during the overtime period. As another issue, management will wish to know why there was the need to work overtime, and will seek to control such an increase in labour costs.

However, where a customer requests overtime to be worked to get a rush job completed, then the full overtime rate (£15 an hour in the above example) is charged as direct labour, and passed on as a cost to the customer.

Other additional payments made to employees – such as a bonus – will be treated in a similar way to overtime premium and will normally be treated as an indirect labour cost.

Idle time

Idle time occurs when production is stopped through no fault of the production-line employees – for example, a machine breakdown, or a shortage of materials. Employees paid under Piecework or a bonus system will receive time rate for the period of the stoppage. Such wages costs are normally charged to overheads as indirect labour.

Similarly, time spent by direct workers on non-productive work e.g. attendance on a training course – would also usually be treated as an overhead.

BOOKKEEPING FOR LABOUR COSTS

In this section we look at the cost bookkeeping entries to record labour costs

– The transfer of labour costs to production and to overheads.

These entries form part of the bookkeeping system for costing.

A wages control account – which may also include salaries – links to the payroll accounting system. It is used to charge labour costs to the various cost, profit, or investment centers of a business or organization. In this way:

- direct labour costs are charged to production
- indirect labour (e.g. factory supervisor) costs are charged to production overheads
- administration labour (e.g. office staff) costs are charged to nonproduction overheads

Note:

- Production overheads are also referred to as operating overheads
- Non-production overheads are also referred to as non-operating overheads

With labour costs the general ledger entries are:

- transfer of direct labour costs to production
- **debit production**
- **credit wages control**
- transfer of indirect labour costs to production overheads
- debit production overheads
- credit wages control
- transfer of administration labour costs to non-production overheads
- debit non-production overheads, eg administration
- credit wages control

Summary :-

- Labour costs – the costs of wages and salaries – are incurred in every kind of business.
- Levels of wage rates paid to employees are influenced by a number of factors including the rates paid by similar local businesses, national living wage rate and national averages.
- The main labour payment methods are based either on time or amounts of work done or on a combination of both.
- Certain wages costs of the direct workers may be classed as indirect labour costs: these include overtime premium and payment for idle or non-productive time.
- Cost bookkeeping entries are made to charge labour costs to the various cost centres of a business or organization.
- -time rate labour payment method based on the time worked by an employee, giving the formula:
Hours worked x rate per hour
- piecework rate labour payment method based on the work done by an employee, giving the formula: number of items produced x rate per unit
- bonus system labour payment method in which an employee is paid a time rate and then receives a bonus if output is better than expected when comparing the time Allowed with the time taken – the bonus is calculated as an agreed percentage of the time saved multiplied by the time rate
- overtime payment an overtime payment rate paid at more than time rate, for example, 'time-and-a-half' overtime premium the additional pay above normal rates which is paid to employees working overtime, for example, the premium part of 'time-and-a-half' is the extra 'half' of the hourly rate

- idle time the time during which work is stopped, due to reasons such as machine breakdown or shortage of materials; employees usually receive time rate for idle time, and the cost is normally classified as an indirect cost