Process Costing Overview

Process costing is used when there is mass production of similar products, where the costs associated with individual units of output cannot be differentiated from each other. In other words, the cost of each product produced is assumed to be the same as the cost of every other product. Under this concept, costs are accumulated over a fixed period of time, summarized, and then allocated to all of the units produced during that period of time on a consistent basis.

Examples of the industries where this type of production occurs include oil refining, food production, and chemical processing. For example, how would you determine the precise cost required to create one gallon of aviation fuel, when thousands of gallons of the same fuel are gushing out of a refinery every hour? The cost accounting methodology used for this scenario is process costing.

To illustrate process costing, let's assume that a product requires several processing operations—each of which occurs in a separate department. The costs of Department One for the month of June amount to $150,000 of direct materials and $120,000 of direct labour. Indirect overhead is applied to Department 1 at a rate of 150% of direct labour cost. The number of units processed in June in Department One is the equivalent of 100,000 units, the per unit cost of the products processed in Department One in June will be $1.50 for direct materials and $1.20 for direct labour and €1.80 for indirect overhead. These costs will then be transferred to Department Two and its processing costs will, in turn, be added to the cost of production of these units.

PRODUCTION COST REPORT:		
DEPARTMENT:	*Department 1*	
PROCESS COST RECORD – PERIOD	*June 20XX*	
THROUGHPUT OF UNITS	*100,000*	
TYPE	COST FOR MONTH	PER UNIT
Raw Material	*150,000*	*1.50*
Direct Labour	*120,000*	*1.20*
Applied Overhead @ 150% of labour	*180,000*	*1.80*
TOTALS	*450,000*	*4.50*

Job Order Cost System

The **job order cost system** is used when services are carried out based on specific customer orders. Each service is considered a job and will have differing degrees of labour and material inputs. It is particularly suited to Vehicle Servicing as each Job will entail differing expenditures on materials required for the job and require differing degrees of labour time and skill.

Costs are tracked by job reference – each service having its own unique Job Number. The job order cost system must capture and track by job number the related mix of costs of carrying out each job, which includes materials, labor, and indirect overhead. To track costs, the following documents are used:

Job cost sheet is a document used to record all costs directly attributable to a Job and is prepared by companies that use job-order costing system to compute and allocate costs to services.

The accounting department is responsible to record all manufacturing costs (direct materials, direct labor, and manufacturing overhead) on the job cost sheet. A separate job cost sheet is prepared for each individual job.

All necessary details about the job and costs incurred to complete the job are written on the job cost sheet.

The information about a job or order that is shown on job cost sheet usually includes job number, customer, vehicle type, starting date, completing date etc.

The information about servicing costs that is shown on job cost sheet usually includes:

- materials requisition number and cost of direct materials issued
- time clocked in, direct labor hours, direct labor rate per hour and total labour cost
- applied indirect overhead either at a rate per direct labor or percentage of labour cost.

Once the cost of a job has been ascertained, it is then marked up so that a sales invoice is prepared and the profit on the job is earned.

Example:

An example of a complete job cost sheet is given below:

Job Cost Sheet

Job Number 2B47 — Date initiated March 2

Department Milling — Date completed March 8

Item Special order casing — Units completed 6

For stock _____

Direct Materials		Direct Labor			Manufacturing Overhead		
Req. No.	Amount	Ticket	Hours	Amount	Hours	Rate	Amount
14873	$ 680	843	$ 5	$ 45	27	$8/DLH	$216
14875	506	846	8	80			
14912	238	850	4	21			
	$ 1,404	851	10	54			
			27	$ 180			

Cost Summary		Units Shipped		
		Date	Number	Balance
Direct materials	$ 1,404	March 8	---	6
Direct labor	180			
Manufacturing overhead	216			
Total cost	1,800			
Unit product cost	300*			

* $1,800 / 6 units = $300 per unit

3–7. Job No. 1321 for the Staycool Company was the installation of air conditioning in a new 50-unit apartment building. Work began on March 7, and the job was completed on March 18. Costs were incurred as follows:

Mar. 8 Ductwork costing $2,500 was delivered to the job for installation.
10 Wiring and other electrical items costing $750 were delivered to the job for installation.
11 Direct labor on the job for the first week was 250 hours at $8 per hour.
14 Fifty compressor and cooling coil units costing $400 each were delivered to the job for installation.
18 Direct labor on the job for the second week was 240 hours at $8 per hour.

Overhead costs are assigned to jobs on the basis of 110 percent of direct labor.

Required:

A. Prepare a job cost record for Job No. 1321.
B. If the Staycool Company agreed to do Job No. 1321 at manufacturing cost plus 10 percent, what price would it bill to the customer?
C. What would be the Staycool Company's gross margin on this job?

3–8. The Handy Tool Company manufactures various tools and parts for small gasoline engines, some for special order and some for stock. At the end of April a summary of job cost sheets reflects the following data:

Job No.	*Customer or stock No.*	*Total cost*
1,002	Part No. 32	$4,500
1,100	Customer No. 45	7,800
1,205	Customer No. 69	7,200

During May two new jobs were started: 1,206 for stock Part No. 18, and 1,207 for Customer No. 70. Job Nos. 1,002, 1,100, and 1,206 were completed during May. Customer No. 45 paid $20,000 in full for his order. None of the stock parts were sold. Total costs incurred in May are shown below by job number:

Job No.	*Amount*
1,002	$4,900
1,100	8,000
1,205	600
1,206	5,000
1,207	3,100

Required:

A. Produce a summary job cost sheet to show the jobs still in process May 31.
B. Compute the cost of goods completed (manufactured) for May.

4-11. Accounting for Overhead; Predetermined Rates. The Aaron Company uses a predetermined overhead rate in applying overhead to production orders on a *labor-cost* basis for Department A and on a machine-hour basis for Department B. At the beginning of 19_1, the company made the following predictions:

	Dept. A	Dept. B
Direct-labor cost	$128,000	$ 35,000
Factory overhead	144,000	150,000
Direct-labor hours	16,000	5,000
Machine-hours	1,000	20,000

required

1. What is the predetermined overhead *rate* that should be used in Department A? In Department B?

During the month of January, the cost sheet for production order No. 200 shows the following:

	Dept. A	Dept. B
Materials requisitioned	$20.00	$40.00
Direct-labor cost	$32.00	$21.00
Direct-labor hours	4	3
Machine-hours	1	13

2. What is the *total overhead* cost of production order No. 200?
3. Assuming that Job No. 200 consisted of 20 units of product, what is the *unit cost* of Job No. 200?
4. At the *end* of 19_1, it was found that *actual* factory-overhead costs amounted to $160,000 in Department A and $138,000 in Department B.

required

Give the over- or underapplied overhead amount for each department and for the factory as a whole. Assume that total actual direct-labor costs and machine-hours conformed with the original predictions.