

Process costing perspectives

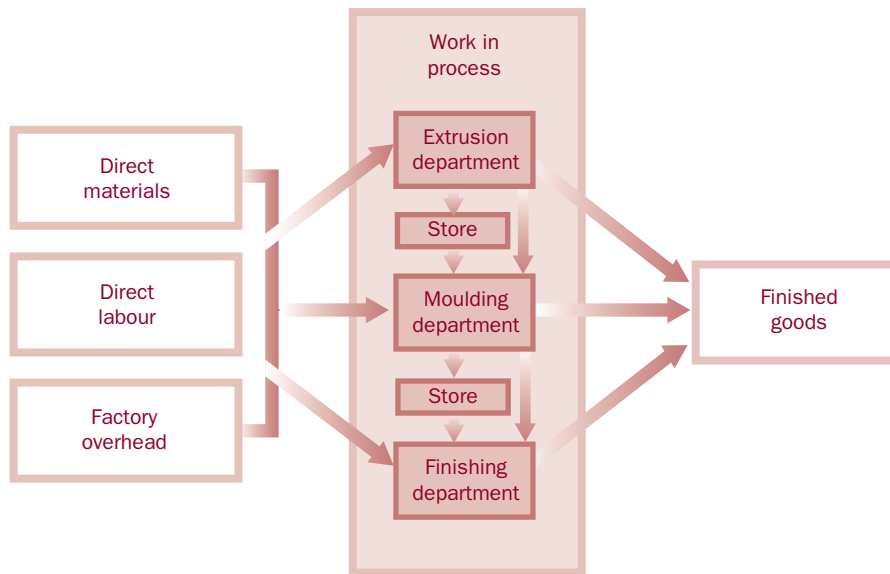
Objectives

By the end of this chapter you will be able to:	Page
1. Describe a process cost system with more than one process	426
2. Prepare cost of production reports for a process cost system with more than one processing department	427
3. Prepare accounting entries for a process cost system with more than one processing department	436
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6. Account for a process cost system that has more than one processing department and incurs normal and abnormal spoilage	451

Introduction

Figure 14.1 illustrates process costing for an organisation with more than one department. Note that direct materials, direct labour and factory overhead can be accumulated in each processing department. It should also be noted that completed units from one department may be transferred into store for later additional processing or transferred directly to the next department. For example, units completed in the Extrusion department are transferred directly to the Moulding department or sent to store.

Figure 14.1 • Process costing—more than one department

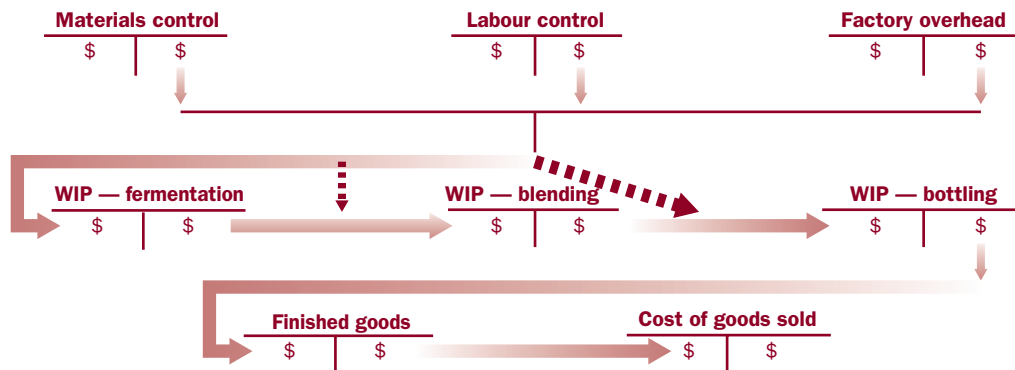


Cost flows—more than one department

Cathedral Hill Vineyard is a small vineyard in the Hunter Valley of New South Wales. Cathedral Hill makes Cabernet and Semillon wines.

Suppose that there are three processing departments at Cathedral Hill. In the Fermentation department, grapes are crushed, fermented and then pressed. The juice is transferred to the Blending department, where the wine is blended and a small quantity of sulphur dioxide is added to prevent oxidisation. The wine then moves on to the Bottling department, where it is bottled and packaged.

Figure 14.2 shows the costs flows for this situation. The broken lines indicate that extra materials may be added in later departments and that additional direct labour and factory overhead may also be required. At Cathedral Hill Vineyard some additional material would be necessary for each department.

Figure 14.2 • Costs flows—process costing—more than one department

Note that the output from one department becomes the input for the next department. For certain businesses, a portion of the output from an earlier department may result in a product that is saleable without further processing and is transferred directly to finished goods. Some output would be transferred to the following department. Any remaining output may be stored until required by the next department at a future time.

Cost of production reports—more than one process

Chapter 13 introduced the five steps required to prepare a cost of production report. Cost of production reports are also known as process cost sheets, cost of production summaries, production cost worksheets and similar titles.

The five steps required to prepare a cost of production report are:

1. Identify physical units.
2. Calculate equivalent completed units.
3. Identify total costs to be allocated.
4. Compute costs per equivalent unit.
5. Allocate total costs.

These steps will be followed for each department where the process cost system involves more than one department.

Both the weighted average and first-in-first-out (FIFO) methods of inventory valuation will be illustrated.

Tag this page as the data will be used for Examples 14.1 to 14.4

Data for Examples 14.1 to 14.4

Caulfield Cleaning Ltd produces a high-quality cleaning agent. The cleaning agent is prepared in the Mixing department and then immediately transferred to the Packing department, where it is poured into 1 litre plastic bottles.

Both processes are substantially automated and require minimal human intervention.

(Continued)

Following is information relating to Caulfield Cleaning's operations for May.

Mixing department

Direct materials—liquids and chemicals—are added at the start of the process. Conversion costs are incurred continuously during the process.

Production

	Litres
Work in process 1 May	30 000
Started in May	570 000
Completed in May	580 000
Work in process 31 May	20 000

Work in process

	Degree of completion
Work in process 1 May	30%
Work in process 31 May	60%

Costs

	\$
Work in process 1 May	
Direct materials	40 000
Direct labour	2 600
Factory overhead	<u>7 800</u>
	50 400
Costs incurred during May	
Direct materials	380 000
Direct labour	27 000
Factory overhead	<u>81 000</u>
	<u>488 000</u>

Packing department

The cleaning liquid is packed in 1 litre bottles. The bottles are added at the beginning of the process.

Production

	Litres
Work in process 1 May	25 000
Started in May—from Mixing	580 000
Completed in May	585 000
Work in process 31 May	20 000

Work in process

	Degree of completion
Work in process 1 May	60%
Work in process 31 May	80%

Costs

	\$
Work in process 1 May	
Transferred in from Mixing	22 500
Direct materials	5 000
Direct labour	900
Factory overhead	<u>2 700</u>
	<u>31 100</u>

(Continued)

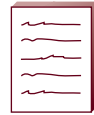
Costs incurred during May	
Transferred in from Mixing—as calculated in Mixing department's cost of production report	
Direct materials	128 100
Direct labour	41 170
Factory overhead	123 510

Weighted average

The cost of production reports for the two departments appear below. The same principles dealt with in Chapter 13 are applied here.

Example 14.1

**Caulfield Cleaning Ltd—Mixing department
Cost of production report for the month of May**



	Physical units	Equivalent completed units		
		Direct materials	Direct labour	Factory overhead
Work in process 1 May	30 000			
Started in May	570 000			
Units in production	600 000			
Completed in May	580 000	580 000	580 000	580 000
Work in process 31 May	20 000	20 000	12 000	12 000
Units accounted for	600 000			
Work done to date		600 000	592 000	592 000
Costs	Total \$			
Work in process 1 May	50 400	40 000	2 600	7 800
Costs added in May	488 000	380 000	27 000	81 000
Costs to be allocated	538 400	420 000	29 600	88 800
Divide by equivalent units		600 000	592 000	592 000
Costs per equivalent unit	\$0.90	\$0.70	\$0.05	\$0.15
Allocation of costs	\$			
Work in process 31 May				
Direct materials	14 000	(20 000 × \$0.70)		
Direct labour	600		(12 000 × \$0.05)	
Factory overhead	1 800			(12 000 × \$0.15)
	16 400			
Completed units— transferred to Packing department	522 000	(580 000 × \$0.90)		
Total costs allocated	538 400			

**Caulfield Cleaning Ltd—Packing department
Cost of production report for the month of May**

	Physical units	Transferred in	Equivalent completed units		
			Direct materials	Direct labour	Factory overhead
Work in process 1 May	25 000				
Started in May	<u>580 000</u>				
Units in production	<u>605 000</u>				
Completed in May	585 000	585 000	585 000	585 000	585 000
Work in process 31 May	<u>20 000</u>	<u>20 000</u>	<u>20 000</u>	<u>16 000</u>	<u>16 000</u>
Units accounted for	<u>605 000</u>				
Work done to date		<u>605 000</u>	<u>605 000</u>	<u>601 000</u>	<u>601 000</u>
Costs	Total \$				
Work in process 1 May	31 100	22 500	5 000	900	2 700
Costs added in May	<u>814 780</u>	<u>522 000</u>	<u>128 100</u>	<u>41 170</u>	<u>123 510</u>
Costs to be allocated	<u>845 880</u>	<u>544 500</u>	<u>133 100</u>	<u>42 070</u>	<u>126 210</u>
Divide by equivalent units		<u>605 000</u>	<u>605 000</u>	<u>601 000</u>	<u>601 000</u>
Costs per equivalent unit	<u>\$1.40</u>	<u>\$0.90</u>	<u>\$0.22</u>	<u>\$0.07</u>	<u>\$0.21</u>
Allocation of costs	\$				
Work in process 31 May					
Transferred in	18 000	(20 000 × \$0.90)			
Direct materials	4 400		(20 000 × \$0.22)		
Direct labour	1 120			(16 000 × \$0.07)	
Factory overhead	<u>3 360</u>				(16 000 × \$0.21)
	26 880				
Completed units— finished goods	<u>819 000</u>			(585 000 × \$1.40)	
Total costs allocated	<u>845 880</u>				

Note that units transferred in from the preceding department, in this case the Mixing department, can be treated in a similar manner to direct materials.



Self-test problem 14.1

Hilton Manufacturing Ltd uses two processing departments to produce its product. Materials are introduced into process 1 at the beginning of that process. The product moves directly from process 1 to the start of process 2. Additional material is added halfway (50%) through process 2. Conversion costs are incurred evenly throughout both processes.

Information relating to August is given below:

	Process 1	Process 2
Production in units		
Work in process 1 August	1500	1200
Started in August	6000	6750
Completed in August	6750	6600
Work in process 31 August	750	1350
Degree of completion		
Work in process 1 August	70%	55%
Work in process 31 August	80%	40%
Costs		
	\$	\$
Work in process 1 August		
Direct material	30 000	36 000
Transfers in	—	42 000
Direct labour	7 500	7 200
Factory overhead	3 750	7 200
Input to production in August		
Direct material	120 000	162 000
Direct labour	66 000	64 200
Factory overhead	33 000	64 200

Prepare cost of production reports for both departments. Assume the weighted average method of inventory valuation.

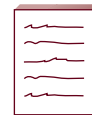
You should now be able to do Questions 14.1 and 14.2.

First-in-first-out (FIFO)

When applying the FIFO method of inventory valuation it is important to make the distinction between work already completed at the start of the period and work completed during the period. Under the FIFO method, unit costs for each period may be different.

Example 14.2

Refer back to the data for Caulfield Cleaning Ltd (p. 427). Cost of production reports will now be prepared assuming that the FIFO method of inventory valuation is used in the process cost system.



Caulfield Cleaning Ltd—Mixing department
Cost of production report for the month of May

	Physical units	Equivalent completed units		
		Direct materials	Direct labour	Factory overhead
Work in process 1 May	30 000			
Started in May	<u>570 000</u>			
Units in production	600 000			
Completed in May	580 000	580 000	580 000	580 000
Work in process 31 May	<u>20 000</u>	<u>20 000</u>	<u>12 000</u>	<u>12 000</u>
Units accounted for	<u>600 000</u>			
Work done to date		600 000	592 000	592 000
less Equivalent units already completed in work in process 1 May		<u>30 000</u>	<u>9 000</u>	<u>9 000</u>
Work done in May		570 000	583 000	583 000
Costs	Total \$			
Work in process 1 May	50 400			
Costs added in May	<u>488 000</u>	380 000	27 000	81 000
Costs to be allocated	<u>538 400</u>			
Divide by equivalent units		<u>570 000</u>	<u>583 000</u>	<u>583 000</u>
Costs per equivalent unit	<u>\$0.851 92</u>	<u>\$0.666 67</u>	<u>\$0.046 31</u>	<u>\$0.138 94</u>
Allocation of costs	\$			
Work in process 31 May				
Direct materials	13 333	(20 000 × \$0.666 67)		
Direct labour	555	(12 000 × \$0.046 31)		
Factory overhead	<u>1 667</u>	(12 000 × \$0.138 94)		
	<u>15 555</u>			
Completed and transferred to Packing department:				
Work in process 1 May	50 400	(30% complete)		
Costs added in May				
Direct labour	972	(30 000 × 70% × \$0.046 31)		
Factory overhead	<u>2 917</u>	(30 000 × 70% × \$0.138 94)		
	54 289			
Started and completed (580 000 – 30 000)	<u>468 556</u>	(550 000 × \$0.851 92)		
	<u>522 845</u>			
Total costs allocated	<u>538 400</u>			

Caulfield Cleaning Ltd—Packing department
Cost of production report for the month of May

	Physical units	Transferred in	Equivalent completed units		
			Direct materials	Direct labour	Factory overhead
Work in process 1 May	25 000				
Started in May	<u>580 000</u>				
Units in production	<u>605 000</u>				
Completed in May	585 000	585 000	585 000	585 000	585 000
Work in process 31 May	<u>20 000</u>	<u>20 000</u>	<u>20 000</u>	<u>16 000</u>	<u>16 000</u>
Units accounted for	<u>605 000</u>				
Work done to date		605 000	605 000	601 000	601 000
less Equivalent units already completed in work in process 1 May		<u>25 000</u>	<u>25 000</u>	<u>15 000</u>	<u>15 000</u>
Work done in May		<u>580 000</u>	<u>580 000</u>	<u>586 000</u>	<u>586 000</u>
Costs	Total \$				
Work in process 1 May	31 100				
Costs added in May	<u>815 624</u>	522 844	128 100	41 170	123 510
Costs to be allocated	<u>846 724</u>				
Divide by equivalent units		<u>580 000</u>	<u>580 000</u>	<u>586 000</u>	<u>586 000</u>
Costs per equivalent unit	<u>\$1.403 34</u>	<u>\$0.901 45</u>	<u>\$0.220 86</u>	<u>\$0.070 26</u>	<u>\$0.210 77</u>
Allocation of costs	\$				
Work in process 31 May					
Transferred in	18 029	(20 000 × \$0.901 45)			
Direct materials	4 418		(20 000 × \$0.220 86)		
Direct labour	1 124			(16 000 × \$0.070 26)	
Factory overhead	3 372			(16 000 × \$0.210 77)	
	<u>26 943</u>				
Completed and transferred to finished goods					
Work in process 1 May	31 100	(60% complete)			
Costs added in May					
Direct labour	703		(25 000 × 40% × \$0.070 26)		
Factory overhead	<u>2 108</u>		(25 000 × 40% × \$0.210 77)		
	33 911				
Started and completed (585 000 – 25 000)	<u>785 870</u>		(560 000 × \$1.403 34)		
	<u>819 781</u>				
Total costs allocated	<u>846 724</u>				

Note that the amount of costs added for May units transferred in from the Mixing department is different for the weighted average and FIFO methods of inventory valuation because of the assumptions inherent in the each of the methods.

Total cost transferred out

In Example 14.2, note the calculations for establishing the costs for the units completed and transferred out. This section of the cost of production report is similar to the *proof of costs allocated to finished goods* used in cost of production reports when the FIFO method of inventory valuation as illustrated in Chapter 13.

The FIFO approach assumes that the opening work in process would be the first units completed. Therefore, the costs for these units are calculated first by taking the opening balance and then adding a share of the current period’s costs.

Then costs for those units that were both started and finished during the period are computed.

The totals of these components are added together to find the total costs for completed units transferred out of the process.

Including this detail in the body of the cost of production report provides a more informative document. This approach is adopted for the remainder of this chapter for all examples and exercises using the FIFO method of inventory valuation.



Self-test problem 14.2

Refer to the data in Self-test problem 14.1.

Required

Prepare cost of production reports for both departments. Assume the FIFO method of inventory valuation.

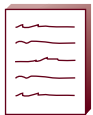


You should now be able to do Questions 14.3 and 14.4.

FIFO—alternative method

Chapter 13 introduced an alternative method for calculating equivalent completed units when the FIFO method of inventory valuation is used in process costing (see p. 408) and this method will be looked at here.

Refer again to the data for Caulfield Cleaning Ltd (p. 427).



Example 14.3

Equivalent completed units for Mixing department—May

	Physical units	Equivalent completed units		
		Direct materials	Direct labour	Factory overhead
Work in process 1 May	30 000			
Started in May	570 000			
Units in production	600 000			

(Continued)

	Physical units	Equivalent completed units		
		Direct materials	Direct labour	Factory overhead
Units completed during May				
Work in process 1 May	30 000	—	21 000	21 000
Completed in May	550 000	550 000	550 000	550 000
Work in process 31 May	<u>20 000</u>	<u>20 000</u>	<u>12 000</u>	<u>12 000</u>
Units accounted for	<u>600 000</u>			
Work done in May		<u>570 000</u>	<u>583 000</u>	<u>583 000</u>

The following points should be noted:

- Beginning work in process had already received direct materials. Thus, in May no additional material was necessary for those units. Conversion costs were 30% complete for the 30 000 units, so the remaining 70% (21 000 units) were completed in June.
- Units started and completed in May were calculated by taking the units started in May (570 000) and subtracting the work in process at 31 May (20 000). Remember we are using the FIFO method and, therefore, all the closing work in process must have come from the units started during May.

In a similar manner the equivalent completed units for the Packing department can be calculated.

Equivalent completed units for Packing department—May

	Physical units	Transferred in	Equivalent completed units		
			Direct materials	Direct labour	Factory overhead
Work in process 1 May	25 000				
Started in May	<u>580 000</u>				
Units in production	<u>605 000</u>				
Units completed during May					
Work in process 1 May	25 000	—	—	10 000	10 000
Started and completed in May	560 000	560 000	560 000	560 000	560 000
Work in process 31 May	<u>20 000</u>	<u>20 000</u>	<u>20 000</u>	<u>16 000</u>	<u>16 000</u>
Units accounted for	<u>605 000</u>				
Work done in May		<u>580 000</u>	<u>580 000</u>	<u>586 000</u>	<u>586 000</u>

Either method for calculating equivalent completed units for FIFO is acceptable and is a matter of choice for the user.

Self-test problem 14.3

Refer to Self-test problem 14.1.

Required

Calculate the equivalent completed units for both departments assuming the alternative method for FIFO.

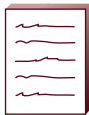




You should now be able to do Question 14.5.

Accounting entries

The accounts to be debited and credited were introduced in Chapter 3 and revisited in subsequent chapters. The amounts representing completed units transferred from one department to another and from the final department to finished goods will reflect the results of calculations required for the weighted average or FIFO methods of inventory valuation.



Example 14.4

The cost of production reports using the FIFO method will be used to illustrate the accounting entries. Refer to Example 14.2.

- (a) Prepare the journal entries for the Mixing and Packing departments for May.
- (b) Prepare the work in process (WIP) accounts for the Mixing and Packing departments for May.

Solution

(a)

Entries in general journal form

Work in process—Mixing	\$ 380 000	\$
Materials control		380 000
Materials input to Mixing department		
Work in process—Mixing	27 000	
Labour control		27 000
Direct labour charged to Mixing department		
Work in process—Mixing	81 000	
Factory overhead		81 000
Overhead applied to Mixing department		
Work in process—Packing	522 844	
Work in process—Mixing		522 844
Units transferred from Mixing department to Packing department		
Work in process—Packing	128 100	
Materials control		128 100
Materials input to Packing department		
Work in process—Packing	41 170	
Labour control		41 170
Direct labour charged to Packing department		
Work in process—Packing	123 510	
Factory overhead		123 510
Overhead applied to Packing department		

(Continued)

Finished goods	\$	\$
Work in process—Packing	819 781	819 781
Completed units transferred		

Note that each department has its own work in process account and that when units are transferred from one department to another this is reflected in a journal entry from one work in process account to another. Refer to the fourth entry above.

(b)

Work in process—Mixing

Date	Particulars	Debit \$	Date	Particulars	Credit \$
1 May	Balance b/d	50 400	31 May	WIP—Packing	522 845
31 May	Material	380 000		Balance c/d	15 555
	Labour	27 000			
	Overhead	<u>81 000</u>			
		<u>538 400</u>			<u>538 400</u>
1 June	Balance b/d	15 555			

Work in process—Packing

Date	Particulars	Debit \$	Date	Particulars	Credit \$
1 May	Balance b/d	31 100	31 May	Finished goods	819 781
31 May	WIP—Mixing	522 844		Balance c/d	26 943
	Material	128 100			
	Labour	41 170			
	Overhead	<u>123 510</u>			
		<u>846 724</u>			<u>846 724</u>
1 June	Balance b/d	26 943			

Self-test problem 14.4

Refer to Self-test problem 14.1.

Required

Assume the weighted average method of inventory valuation.

- (a) Prepare the journal entries for processes 1 and 2 for August.
- (b) Prepare the work in process accounts for processes 1 and 2 for August.



You should now be able to do Questions 14.6 and 14.7.

Process costing and lost or spoiled units

Spoilage can occur during production because some units being produced have failed to pass a quality test due to defects that have occurred during processing.

Lost units are usually the result of shrinkage, evaporation or something similar occurring during production. Sometimes this is unavoidable as it is the consequence of the production process. Consider a soft drink manufacturer. Assume that 10 000 litres are put into production. During bottling there is some loss due to spillage and the output is 9900 litres. This means there has been a loss of 100 litres.

For convenience, this chapter will use the term *spoilage* to cover both of the situations mentioned above. Spoilage may be normal or abnormal.

Normal spoilage eventuates due to the nature of the production process. Normal spoilage will occur regardless of how efficiently production takes place. It is a natural consequence of manufacturing the finished product.

Normal spoilage can be accounted for by one of two methods:

1. Costs are allocated to normal spoilage. These costs are then added to the allocated costs of good completed units to arrive at the full cost of completed units.
2. The costs of normal spoilage are shared between all other units in the process. This is achieved by the simple expedient of ignoring normal spoilage when calculating equivalent completed units. Thus, the unit cost is increased for good completed units, work in process and any abnormal spoilage.

The first method is preferred. However, both methods will be illustrated.

Abnormal spoilage is that amount of spoilage that exceeds what is considered normal. This may occur because of defective machinery, poor quality materials, accidents, inefficient employees or other reasons.

It is usual to allocate appropriate costs to abnormal spoilage and charge these to an abnormal spoilage account, which would appear separately in the statement of financial performance.

Calculation of normal and abnormal spoilage

Assume the following for the Milling department of a timber production business.

	Cubic metres
Work in process at start	3 000
Direct material input at start of process	75 000
Good completed product	67 500
Normal spoilage is considered to be 6% of good output	
Work in process at end	4 500

To find the normal and abnormal spoilage it is necessary to prepare a statement that will reflect the physical units column of the cost of production report.

	Units
Work in process at start	3 000
Input to production	75 000
Units in production	<u>78 000</u>

(Continued)

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	Units
Completed in period	67 500
Normal spoilage ^(a)	4 050
Abnormal spoilage ^(b)	1 950
Work in process at end	<u>4 500</u>
Units accounted for	<u>78 000</u>

(a) Normal spoilage is $6\% \times 67\,500 = 4\,050$

(b) Abnormal spoilage is the missing figure: $78\,000 - 67\,500 - 4\,050 - 4\,500 = 1\,950$

Self-test problem 14.5

You are supplied with the following production data for a manufacturing firm:



	Units
Work in process at start	13 300
Started during period	105 000
Good units completed	92 400
Work in process at end	17 500

Normal spoilage is considered to be 5% of good units completed.

Required

Calculate the normal and abnormal spoilage in units.

You should now be able to do Question 14.8.



Tag this page as the data will be used for Examples 14.5 to 14.7

Data for Examples 14.5 to 14.7

Wilson Industries produces fudge in 100 kilogram blocks, which it sells to confectionery companies. Wilson uses process costing. The production details for Wilson's single processing department for the month of February are:

	Units
Work in process 1 February (70% complete)	3 000
Started in February	19 000
Good units completed during February	18 600
Work in process 28 February (50% complete)	2 250

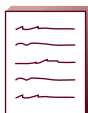
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Costs	\$
Work in process 1 February	
Direct materials	90 000
Direct labour	22 500
Factory overhead	11 250
Input to production during February	
Direct materials	360 000
Direct labour	198 000
Factory overhead	99 000
<p>Direct material is added at the beginning of the process. Conversion costs are added uniformly throughout the process.</p> <p>Normal spoilage is 5% of good output. Any additional spoilage is considered abnormal. All spoilage is detected at the end of the process.</p>	

Spoilage—method 1

Again the five-step approach introduced in Chapter 13 will be used. Recall that for method 1, costs relating to normal spoilage are added to the costs of good completed units

Weighted average: spoilage—method 1



Example 14.5

Refer to the data for Wilson Industries (p. 439).

Prepare a cost of production report. The cost of normal spoilage is to be charged to good completed units. Assume the weighted average method of inventory valuation.

Solution


Wilson Industries
Cost of production report for the month of February

	Physical units	Equivalent completed units		
		Direct materials	Direct labour	Factory overhead
Work in process 1 February	3 000			
Started in February	19 000			
Units in production	22 000			
Completed in February	18 600	18 600	18 600	18 600
Normal spoilage (5% × 18 600)	930	930	930	930
Abnormal spoilage (22 000 – 18 600 – 930 – 2250)	220	220	220	220
Work in process 28 February	2 250	2 250	1 125	1 125
Units accounted for	22 000			
Work done to date		22 000	20 875	20 875

(Continued)

	Physical units	Equivalent completed units		
		Direct materials	Direct labour	Factory overhead
Costs	Total (\$)			
Work in process 1 February	123 750	90 000	22 500	11 250
Costs added in February	657 000	360 000	198 000	99 000
Costs to be allocated	<u>780 750</u>	<u>450 000</u>	<u>220 500</u>	<u>110 250</u>
Divide by equivalent units		<u>22 000</u>	<u>20 875</u>	<u>20 875</u>
Costs per equivalent unit	<u>\$36.2988</u>	<u>\$20.4545</u>	<u>\$10.5629</u>	<u>\$5.2814</u>
Allocation of costs	\$			
Work in process 28 February				
Direct materials	46 023	(2250 × \$20.4545)		
Direct labour	11 883		(1125 × \$10.5629)	
Factory overhead	<u>5 942</u>		(1125 × \$5.2814)	
	<u>63 848</u>			
Completed and transferred out				
Costs before spoilage	675 158		(18 600 × \$36.2988)	
Normal spoilage	<u>33 758</u>		(930 × \$36.2988)	
	<u>708 916</u>			
Abnormal spoilage	<u>7 986</u>		(220 × \$36.2988)	
Total costs allocated	<u>780 750</u>			

Self-test problem 14.6

Davis Manufacturing provides you with the following information for its one processing department for the month of July. 

Production details	Units
Work in process 1 July (40% complete)	7 500
Units started in July	30 000
Good units completed	26 250
Normal spoilage	1 500
Abnormal spoilage	?
Work in process 31 July (25% complete)	9 000
Costs for July	\$
Work in process 1 July	
Direct materials	86 250
Direct labour	14 400
Factory overhead	17 280
Input to production during July	
Direct materials	360 000
Direct labour	138 750
Factory overhead	166 500

Additional information

- Direct materials are added at the beginning of the process.
- Conversion costs are added uniformly throughout the process.
- Spoilage is detected at the end of the process.

Required

Assume that Davis Manufacturing uses the weighted average method of inventory valuation and that normal spoilage is charged to good completed units. Prepare a cost of production report for July.



You should now be able to do Questions 14.9 and 14.10.

FIFO: spoilage—method 1



Example 14.6

Refer to the data for Wilson Industries (p. 439).

Prepare a cost of production report. The cost of normal spoilage is to be charged to good completed units. Assume the FIFO method of inventory valuation.

Solution

Wilson Industries
Cost of production report for the month of February

	Physical units	Equivalent completed units		
		Direct materials	Direct labour	Factory overhead
Work in process 1 February	3 000			
Started in February	<u>19 000</u>			
Units in production	<u>22 000</u>			
Completed in February	18 600	18 600	18 600	18 600
Normal spoilage (5% × 18 600)	930	930	930	930
Abnormal spoilage (22 000 – 18 600 – 930 – 2250)	220	220	220	220
Work in process 28 February	<u>2 250</u>	<u>2 250</u>	<u>1 125</u>	<u>1 125</u>
Units accounted for	<u>22 000</u>			
Work done to date		22 000	20 875	20 875
less Equivalent units already completed in work in process 1 February		<u>3 000</u>	<u>2 100</u>	<u>2 100</u>
Work done in February		<u>19 000</u>	<u>18 775</u>	<u>18 775</u>
Costs	Total \$			
Work in process 1 February	123 750			
Costs added in February	<u>657 000</u>	360 000	198 000	99 000
Costs to be allocated	780 750			

(Continued)

		Equivalent completed units		
	Physical units	Direct materials	Direct labour	Factory overhead
Divide by equivalent units		<u>19 000</u>	<u>18 775</u>	<u>18 775</u>
Costs per equivalent unit	<u>\$34.7663</u>	<u>\$18.9474</u>	<u>\$10.5459</u>	<u>\$5.273</u>
Allocation of costs	\$			
Work in process 28 February				
Direct materials	42 632	(2250 × \$18.9474)		
Direct labour	11 864		(1125 × \$10.5459)	
Factory overhead	<u>5 932</u>			(1125 × \$5.273)
	<u>60 428</u>			
Completed and transferred out	\$			
Work in process 1 February	123 750			
Costs added during February				
Direct labour	9 491		(900 × \$10.5459)	
Factory overhead	<u>4 746</u>			(900 × \$5.273)
	137 987			
Started and completed (18 600 – 3000)	542 354		(15 600 × \$34.7663)	
Normal spoilage	<u>32 333</u>		(930 × \$34.7663)	
Total costs transferred out	<u>712 674</u>			
Abnormal spoilage	<u>7 648</u>		(220 × \$34.7663)	
Total costs allocated	<u>780 750</u>			

Self-test problem 14.7

Refer to the data in Self-test problem 14.6.

Required

Assume Davis Manufacturing uses the FIFO method of inventory valuation and normal spoilage is charged to good completed units. Prepare a cost of production report for July.

You should now be able to do Questions 14.11 and 14.12.

Accounting entries: spoilage—method 1

The figures from the FIFO cost of production report for Wilson Industries will now be used as the basis for recording appropriate accounting entries.

Example 14.7

Refer to Example 14.6.

- (a) Prepare the journal entries to record the processing operation of Wilson Industries for February.
- (b) Prepare the work in process account for February.



Solution

(a)

Entries in general journal form

	\$	\$
Work in process Materials control	360 000	360 000
Materials input to production		
Work in process Labour control	198 000	198 000
Direct labour charged production		
Work in process Factory overhead	99 000	99 000
Overhead applied to production		
Finished goods Work in process	712 674	712 674
Completed units transferred		
Abnormal spoilage Work in process	7 648	7 648
Cost of abnormal spoilage		

(b)

Work in process

Date	Particulars	Debit \$	Date	Particulars	Credit \$
1 Feb.	Balance b/d	123 750	28 Feb.	Finished goods	712 674
28 Feb.	Material	360 000		Abnormal spoilage	7 648
	Labour	198 000		Balance c/d	60 428
	Overhead	99 000			
		<u>780 750</u>			<u>780 750</u>
1 Mar.	Balance b/d	60 428			



Self-test problem 14.8

Refer to Self-test problem 14.6.

Required

- (a) Prepare the journal entries to record the processing operations of Davis Manufacturing for July.
- (b) Prepare the work in process account for July.



You should now be able to do Question 14.13.

Spoilage—method 2

As stated earlier, the second method of dealing with normal spoilage is by neglect. That is, normal spoilage is ignored when calculating *equivalent completed units*. This has the effect of spreading costs over all remaining units.

Earlier examples in this chapter have concentrated on the concept being explored without introducing complications. However, life is not so simple. Therefore, in addition to the second method of dealing with spoilage, the other concepts that will be considered in the following examples are:

1. Different degrees of completion for direct labour and factory overhead.
2. Spoiled units are identified before the end of the process.

Both of the above have an impact on calculating equivalent completed units and allocation of costs.

Tag this page as the data will be used for Examples 14.8 to 14.10

Data for Examples 14.8 to 14.10

Siena Synergies makes a chemical compound that it sells to pharmaceutical companies.

One material, Zylton, is added at the beginning of the process. A second material, Jitka, is added halfway (50%) into the process.

The production details for Siena's single processing department for the month of May are:

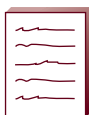
		Units
Work in process 1 May		2 400
Direct labour	60% complete	
Factory overhead	70% complete	
Started in May		15 200
Completed during May		14 900
Work in process 31 May		1 800
Direct labour	35% complete	
Factory overhead	40% complete	
Normal spoilage		600

Spoilage is detected at the halfway point immediately before Jitka is added; these units are 50% complete as to conversion costs.

Costs for May are:

	\$
Work in process 1 May	
Zylton	60 000
Jitka	48 000
Direct labour	23 000
Factory overhead	13 500
Input to production during May	
Zylton	240 000
Jitka	192 000
Direct labour	237 000
Factory overhead	120 000

Weighted average: spoilage—method 2



Example 14.8

Refer to the data for Siena Synergies (p. 445).

Prepare a cost of production report for May. Normal spoilage is dealt with by the method of neglect, that is, no costs are allocated to normal spoilage. Assume the weighted average method of inventory valuation.

Solution

**Siena Synergies
Cost of production report for the month of May**

	Physical units	Equivalent completed units			
		Zylton	Jitka	Direct labour	Factory overhead
Work in process 1 May	2 400				
Started in May	<u>15 200</u>				
Units in production	<u>17 600</u>				
Completed in May	14 900	14 900	14 900	14 900	14 900
Normal spoilage	600	—	—	—	—
Abnormal spoilage (17 600 – 14 900 – 600 – 1800)	300	300	—	150	150
Work in process 31 May	<u>1 800</u>	<u>1 800</u>	<u>—</u>	<u>630</u>	<u>720</u>
Units accounted for	<u>17 600</u>				
Work done to date		<u>17 000</u>	<u>14 900</u>	<u>15 680</u>	<u>15 770</u>
Costs	Total \$				
Work in process 1 May	144 500	60 000	48 000	23 000	13 500
Costs added in May	<u>789 000</u>	<u>240 000</u>	<u>192 000</u>	<u>237 000</u>	<u>120 000</u>
Costs to be allocated	<u>933 500</u>	300 000	240 000	260 000	133 500
Divide by equivalent units		<u>17 000</u>	<u>14 900</u>	<u>15 680</u>	<u>15 770</u>
Costs per equivalent unit	<u>\$58.8015</u>	<u>\$17.6471</u>	<u>\$16.1074</u>	<u>\$16.5816</u>	<u>\$8.4654</u>
Allocation of costs	\$				
Work in process 31 May					
Zylton	31 765	(1800 × \$17.6471)			
Jitka	—		(Not 50% complete)		
Direct labour	10 447			(630 × \$16.5816)	
Factory overhead	<u>6 095</u>			(720 × \$8.4654)	
	<u>48 307</u>				
Completed units—finished goods	<u>876 142</u>		(14 900 × \$58.8015)		
Abnormal spoilage					
Zylton	5 294	(300 × \$17.6471)			
Jitka	—		(Inspected before Jitka added)		
Direct labour	2 487			(150 × \$16.5816)	
Factory overhead	<u>1 270</u>			(150 × \$8.4654)	
	<u>9 051</u>				
Total costs allocated	<u>933 500</u>				

The following should be noted:

1. Normal spoilage has been ignored (neglected) when calculating equivalent completed units.
2. Spoilage is identified at 50% completion immediately before the addition of Jitka. Therefore, no Jitka has been added to abnormal spoilage. Abnormal spoilage is 50% complete as to direct labour and factory overhead. Because of these facts it is necessary to do calculations for each element of costs for abnormal spoilage.

Self-test problem 14.9

Elroy Productions provides you with the following information relating to its processing department for the month of November. 

Production details in units

Work in process 1 November		4500
Direct labour	45% complete	
Factory overhead	40% complete	
Units started in November		18 000
Good units completed in November		15 800
Normal spoilage		800
Abnormal spoilage		400
Work in process 30 November		?
Direct labour	60% complete	
Factory overhead	50% complete	

Costs for November

Work in process 1 November		\$
Direct material		69 000
Direct labour		10 200
Factory overhead		13 800
Input to production during November		
Direct materials		288 000
Direct labour		113 000
Factory overhead		135 000

Additional information

- Direct materials are added at the beginning of the process.
- Spoilage is detected three-quarters of the way through the process and is 75% complete as to conversion costs.

Required

Prepare a cost of production report for the month of November. Normal spoilage is dealt with by the method of neglect. Assume the weighted average method of inventory valuation.

You should now be able to do Question 14.14. 

FIFO: spoilage—method 2



Example 14.9

Refer to the data for Siena Synergies (p. 445).

Required

Prepare a cost of production report for May. Normal spoilage is dealt with by the method of neglect. Assume the FIFO method of inventory valuation is used.

Solution

Siena Synergies
Cost of production report for the month of May

	Physical units	Equivalent completed units			
		Zylton	Jitka	Direct labour	Factory overhead
Work in process 1 May	2 400				
Started in May	<u>15 200</u>				
Units in production	<u>17 600</u>				
Completed in May	14 900	14 900	14 900	14 900	14 900
Normal spoilage	600	—	—	—	—
Abnormal spoilage (17 600 – 14 900 – 600 – 1800)	300	300	—	150	150
Work in process 31 May	<u>1 800</u>	<u>1 800</u>	<u>—</u>	<u>630</u>	<u>720</u>
Units accounted for	<u>17 600</u>				
Work done to date		17 000	14 900	15 680	15 770
less Equivalent units already completed in work in process 1 May		<u>2 400</u>	<u>2 400</u>	<u>1 440</u>	<u>1 680</u>
Work done in May		<u>14 600</u>	<u>12 500</u>	<u>14 240</u>	<u>14 090</u>
Costs	Total \$				
Work in process 1 May	144 500				
Costs added in May	<u>789 000</u>	240 000	192 000	237 000	120 000
Costs to be allocated	<u>933 500</u>				
Divide by equivalent units		<u>14 600</u>	<u>12 500</u>	<u>14 240</u>	<u>14 090</u>
Costs per equivalent unit	<u>\$56.9584</u>	<u>\$16.4384</u>	<u>\$15.36</u>	<u>\$16.6433</u>	<u>\$8.5167</u>
Allocation of costs	\$				
Work in process 31 May					
Zylton	29 589	(1800 × \$16.4384)			
Jitka	—		(Not 50% complete)		
Direct labour	10 485			(630 × \$16.6433)	
Factory overhead	<u>6 132</u>				(720 × \$8.5167)
	<u>46 206</u>				

(Continued)

	Physical units	Equivalent completed units			
		Zylton	Jitka	Direct labour	Factory overhead
Completed and transferred out					
Work in process 1 May	144 500				
Costs added in May					
Direct labour	15 978			(960 × \$16.6433)	
Factory overhead	6 132			(720 × \$8.5167)	
	<u>166 610</u>				
Started and completed (14 900 – 2400)	711 980		(12 500 × \$56.9584)		
	<u>878 590</u>				
Abnormal spoilage					
Zylton	4 931	(300 × \$16.4384)			
Jitka	—		(Inspected before Jitka added)		
Direct labour	2 496			(150 × \$16.6433)	
Factory overhead	1 277			(150 × \$8.5167)	
	<u>8 704</u>				
Total costs allocated	<u>933 500</u>				

Note: As beginning work in process had passed the halfway point at the start of the month, all spoilage must have come from units started during May.

Self-test problem 14.10

Refer to the data for Self-test problem 14.9.

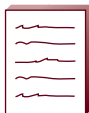
Required

Prepare a cost of production report for November. Normal spoilage is dealt with by the method of neglect. Assume that all abnormal spoilage came from units started in November and that the FIFO inventory valuation method is used.

You should now be able to do Question 14.15.

Accounting entries: spoilage—method 2

The figures from the cost of production report by the FIFO method for Siena Synergies (Example 14.9) will now be used to illustrate the recording of appropriate accounting entries.



Example 14.10

Refer to Example 14.9.

- (a) Prepare the journal entries to record the processing operations of Siena Synergies for May.
- (b) Prepare the work in process account for May.

Solution

(a)

Entries in general journal form

Work in process	\$ 240 000	\$
Materials control		240 000
Zylton input to production		
Work in process	192 000	192 000
Materials control		
Jitka input to production		
Work in process	237 000	237 000
Labour control		
Direct labour charged production		
Work in process	120 000	120 000
Factory overhead		
Overhead applied to production		
Finished goods	878 590	878 590
Work in process		
Completed units transferred		
Abnormal spoilage	8 704	8 704
Work in process		
Cost of abnormal spoilage		

(b)

Work in process

Date	Particulars	Debit \$	Date	Particulars	Credit \$
1 May	Balance b/d	144 500	31 May	Finished goods	878 590
31 May	Material	240 000		Abnormal spoilage	8 704
	Material	192 000		Balance c/d	46 206
	Labour	237 000			
	Overhead	120 000			
		<u>933 500</u>			<u>933 500</u>
1 June	Balance b/d	46 206			

Self-test problem 14.11

Refer to Self-test problem 14.9.

Required

- (a) Prepare the journal entries to record the processing operations of Elroy Productions for November.
- (b) Prepare the work in process account for November.

You should now be able to do Question 14.16.

Process costing—more than one department and spoilage

To deal with the situation where there is more than one department and spoilage it is necessary to combine all of the techniques given in this chapter. Remember that the units and costs transferred into a processing department from a preceding department should be treated in a similar manner to direct materials in the cost of production report.

You should now be able to do Questions 14.17 to 14.22.

Summary

1. *Many organisations using process costing require their product(s) to pass through more than one processing department.*
2. *The five-step procedure introduced in Chapter 13 is still valid for all process costing situations.*
3. *Accounting entries still follow the basic cost flows introduced in Chapter 3.*
4. *Spoilage or lost units can occur in a process cost system.*
5. *Spoilage can be identified as either normal or abnormal.*
6. *Normal spoilage can be accounted for by one of two methods.*
7. *Abnormal spoilage needs to be highlighted.*
8. *All the concepts and situations illustrated in Chapters 13 and 14 can be combined in an environment where an organisation has more than one processing department and where spoilage may occur in any one or all departments.*

Questions

- 14.1 You are provided with the following data for September for the Finishing department of a manufacturer. The product is commenced in the Forming department and transferred directly to the Finishing department.

Production in units

Work in process 1 September	390
Started in September—transferred from Forming	12 930
Completed in September	12 630
Work in process 30 September	690

Degree of completion

Work in process 1 September	
Direct materials	100%
Conversion costs	50%
Work in process 30 September	
Direct materials	80%
Conversion costs	60%

Costs

	\$
Work in process 1 September	
Transferred in from Forming	17 550
Direct materials	4 800
Direct labour	880
Factory overhead	800
Input to production in September	
Transferred in from Forming	606 400
Direct materials	157 550
Direct labour	57 600
Factory overhead	52 900

Required

Prepare a cost of production report for September. Assume the weighted average method of inventory valuation.

- 14.2 Rayburn Products uses a multi-department process costing system. Process 2 details for April are as follows:

Work in process 1 April (60% complete)	1 050 units
Transferred in from process 1	27 550 units
Work in process 30 April (20% complete)	2 040 units

Units are transferred in from process 1 at the start of process 2. Direct material is added one-quarter of the way (25%) through process 2.

Costs in work in process 1 April were:

	\$
Transferred in	5200
Direct material	660
Direct labour incurred	1940
Factory overhead applied	2745

Costs entered into production for April were:

	\$
Transferred in	121 500
Direct material	26 200
Direct labour incurred	79 860
Factory overhead applied	110 215

Required

Prepare the cost of production report for April. Assume the weighted average method of inventory valuation.

14.3 Refer to the data for Question 14.1.

Required

Prepare the cost of production report for September. Assume the FIFO method of inventory valuation.

14.4 Refer to the data for Question 14.2.

Required

Prepare the cost of production report for April. Assume the FIFO method of inventory valuation.

14.5 Benson Ltd uses a process costing system. The product is manufactured by passing through three departments—Moulding, Assembly and Finishing. Production for the Finishing department for May was:

Work in process 1 May	2 800 units
Transferred in from Assembly department	28 000 units
Transferred out to finished goods	23 800 units

Direct material is added at the 25% completion point. Work in process at 1 May was 15% complete. Work in process at 31 May was 30% complete.

Required

Calculate the equivalent completed units for the finishing department assuming the alternative method for FIFO.

14.6 Refer to Question 14.3.

Required

Prepare the journal entries for the Finishing department for September.

14.7 Refer to Question 14.4.

Required

Prepare the work in process account for process 2 for April.

14.8 December data for the Extrusion process follows:

	Units
Work in process 1 December	10 000
Good units completed and transferred to Moulding process	70 000
Work in process 31 December	12 000

Units are inspected at the completion of the process. Total spoilage was found to be 6000 units. Normal spoilage is considered to be 3% of good completed units.

Required

Prepare a statement of physical units for December showing the:

- (a) number of units started;
- (b) normal spoilage;
- (c) abnormal spoilage.

14.9 Mackenzie Manufacturing provides you with the following information for its single processing department.

	Units	Material A	Material B	Conversion costs
		\$	\$	\$
Work in process—start (60% complete)	50	4 050	250	1 695
Started	1 000			
Costs for period		60 000	4 700	87 750
Good completed units	900			
Work in process—end (30% complete)	60			

Material A is added at the start of the process and material B is added at the midpoint of the process. Normal spoilage is considered to be 4% of good completed units. All other spoilage is considered abnormal. Spoilage is detected at the end of the process.

Required

Prepare a cost of production report. Assume the weighted average method of inventory valuation.

14.10 Shanley Company has the following data for January:

Production	Units
Work in process 1 January (40% complete)	4 000
Good units completed	16 000
Normal spoilage	200
Abnormal spoilage	300
Work in process 31 January (30% complete)	4 500

Costs	\$
Work in process 1 January	
Direct material	3 000
Direct labour	3 150
Factory overhead	2 100
Current costs	
Direct material	15 900
Direct labour	30 600
Factory overhead	20 400

Material is added at the beginning of the process. Spoilage is identified at the end of the process.

Required

Prepare a cost of production report for January. Assume the weighted average method of inventory valuation.

14.11 Refer to the data for Question 14.9.

Required

Prepare a cost of production report. Assume the FIFO method of inventory valuation.

14.12 Refer to the data for Question 14.10.

Required

Prepare a cost of production report for January. Assume the FIFO method of inventory valuation.

14.13 Refer to Question 14.12.

Required

- Prepare journal entries for January.
- Prepare the work in process account for January.

14.14 Anquetil Electronics provides you with the following data for March.

Production	Units
Work in process 1 March	300
Started in March	2000
Good units completed in March	1000
Work in process 31 March	1200
Degree of completion	
Work in process 1 March	
Direct materials	70%
Direct labour	50%
Factory overhead	30%
Work in process 31 March	
Direct materials	25%
Direct labour	20%
Factory overhead	10%

Spoilage

Normal spoilage is deemed to be 5% of good completed units and is treated by the method of neglect. Any other spoilage is considered abnormal. All spoilage is considered to have come from units started in the current period and is identified at 20% completion for all cost elements.

Costs	\$
Work in process 1 March	
Direct material	15 000
Direct labour	23 850
Factory overhead	14 400
Current costs	
Direct material	180 000
Direct labour	225 000
Factory overhead	225 000

Required

Prepare a cost of production report for March. Assume the weighted average method of inventory valuation.

14.15 Refer to the data for Question 14.14.

Required

Prepare a cost of production report for March. Assume the FIFO method of inventory valuation.

14.16 Refer to Question 14.15.

Required

Prepare the work in process account for March.

14.17 Goolan Company uses a process cost system. There are two processing departments, Forming and Finishing. Direct materials are added at the beginning of the Forming department. Additional materials are added at the end of the Finishing department. Conversion costs are added uniformly throughout both departments. All good completed units are transferred directly from Forming to Finishing. The data for June is as follows:

	Forming	Finishing
Production in units		
Work in process 1 June	1 700	5 100
Units started in June	15 300	12 580
Units completed and transferred out	12 580	10 200
Normal spoilage	850	510
Abnormal spoilage	850	170
Degree of completion		
Work in process 1 June	80%	75%
Work in process 30 June	25%	20%
Costs	\$	\$
Work in process 1 June		
Direct materials	3 400	
Transferred in costs		21 930
Conversion costs	2 720	8 330

(Continued)

	Forming \$	Finishing \$
Costs added in June		
Direct materials	30 600	2 176
Conversion costs	27 200	16 830

Quality inspection takes place after the processing is completed in each department. It is at this point that spoilage is detected.

Required

Prepare cost of production reports for June for both departments. Use the weighted average method of inventory valuation. Normal spoilage is charged to good completed units.

14.18 Refer to the data for Question 14.17.

Required

Prepare cost of production reports for June for both departments. Use the FIFO method of inventory valuation. Normal spoilage is charged to good completed units.

14.19 William Ltd uses a process cost system. You are provided with the following information for July.

	Process 1	Process 2
Production in units		
Work in process 1 July	2 500	1 500
Input to production	12 500	
Transferred in		13 000
Good completed units	13 000	10 000
Degree of completion		
Work in process 1 July		
Direct material has been added to process 2		
Direct labour	50%	55%
Factory overhead	30%	35%
Work in process 30 July		
Direct material has not been added to process 2		
Direct labour	60%	40%
Factory overhead	45%	25%
Costs	\$	\$
Work in process 1 July	10 650	17 680
Costs added in July		
Direct materials	38 400	40 500
Direct labour	25 300	21 700
Factory overhead	13 000	12 900

Additional information

- Direct materials are added at the start of process 1. Additional materials are added halfway through process 2.
- 500 units were spoiled in process 1. These were discovered on inspection at the end of the process and are to be treated as normal spoilage. The cost of this spoilage is spread over all other units.

- Another 500 units had to be scrapped in process 2 due to faulty materials. These were discovered immediately after the material was added in process 2 and were 50% complete as to conversion costs. This spoilage is to be treated as abnormal and accounted for separately
- The FIFO method of inventory valuation is used.

Required

- Prepare a cost of production report for July for both processes.
- Prepare journal entries for the above for July.

14.20 Screme Manufacturing uses process costing in its production operation. The weighted average method of inventory valuation is used to value work in process. Materials are added at the beginning of the process. Conversion costs are assumed to apply evenly throughout the process.

Normal spoilage is considered to be 10% of good completed units and is to be included in the cost of good units transferred out. All other spoilage is considered to be abnormal. Spoiled units are identified when quality tested at the completion of the process.

The following details are available for the month of April.

Work in process 1 April	
Units 30% completed	500
Direct materials	\$150 750
Conversion costs	\$19 800
Additional units started in April	1700
Good units completed and transferred out during April	1600
Work in process 30 April	
Units 10% completed	380
Costs added during April	
Direct materials	\$512 250
Conversion costs	\$225 750

Required

- Calculate the equivalent units.
 - Calculate the unit cost for materials and conversion costs.
 - Calculate the closing balance of work in process.
 - Calculate the amount to be posted to finished goods.
 - Calculate the amount to be posted to abnormal spoilage.
- 14.21 Alan Limited uses process costing. The details for Department 3 are shown below.

Good output from Department 2 is immediately transferred into the start of the process for Department 3. Material A is added at the start of Department 3 and material B is added halfway through the process. Conversion costs are incurred evenly throughout the process.

Production and costs for the month of October were as follows:

	Units
In process 1 October (75% complete)	600
Started in October	4050
Finished units sent to store during October	3600
In process 31 October (35% completed)	900

Upon inspection at the end of the process, 150 units were found to be spoiled. The cost of these units is to be debited to a *Spoilt units* account.

Costs	Transferred			Direct labour	Factory overhead
	in	Material A	Material B		
	\$	\$	\$	\$	\$
In process 1 October	9 120	2 880	3 840	9 900	9 900
October costs added	64 800	19 440	21 420	86 400	86 400

Required

- (a) Prepare a cost of production report for the month of October, using the weighted average method of inventory valuation.
- (b) Prepare the work in process account for October.

14.22 Refer to the data for Question 14.21.

Required

Prepare a cost of production report for the month of October, using the FIFO method of inventory valuation.