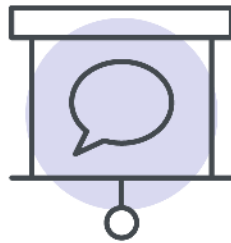

WLU

BU247
Final EXAM
STUDY GUIDE



Lecture Notes

BU247**Lecture 1**Variable Costs

- Graph of variable cost:
 - X-Axis: Activity Level
 - Y Axis: Total Cost
- Assumption is that variable cost per unit is constant, so the slope of the variable cost is a straight diagonal line
- **Direct Labour = Variable Cost**

Fixed Cost

- Fixed costs don't change as activity level does because it's independent from the activity that you do
- FC doesn't change with respect to an underlying activity level in the short-run
- **Depreciation of factory equipment is always a fixed cost**
- **Salary = Fixed**

Mixed Costs

- Has a fixed and variable component
- Ex. Salespeople have a fixed salary but can earn commission
- Shape of graph can vary

Step Variable Cost

- Example

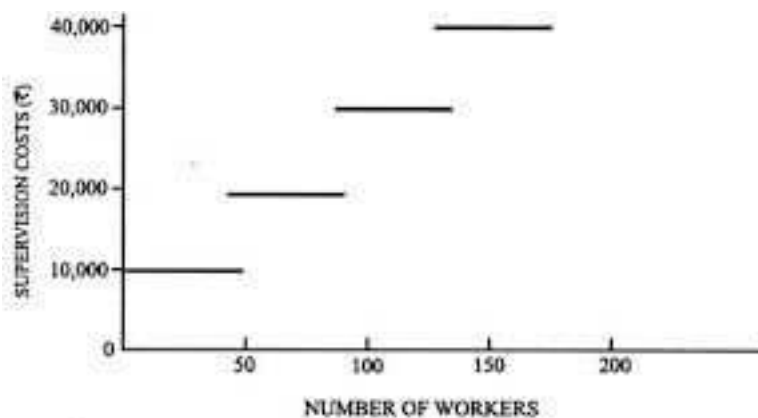


Exhibit 2.5 Step Costs

Incremental Costs

- Cost changes associated with any decision
- Ex. When you usually walk home but decide to take the bus
 - Incremental cost is the bus fare

- Deciding to go on vacation
 - Incremental cost is the cost of the vacation

Sunk Cost

- A cost that you already recognize
- Ex. If you pay rent, that cost is a sunk cost
- **Sunk Cost Phenomenon**
 - Pursuing a course of action long after an objective outsider would pursue that action
 - Explanations
 - Framing
 - Commitment and unwilling to accept defeat
 - Loss of face

Opportunity Cost

- What you give up to pursue a course of action
- Ex. Having one unit of capacity and you can either use it to produce a unit of A and increase your income of \$5 or you could produce one unit of B that would increase your income by \$5
 - Opportunity cost is \$4 if you choose unit A

Avoidable Costs

- Cost you save by choosing a course of action
- Opposite of incremental costs

Exercise

- Salaries of production supervisors
 - Fixed Cost
- Steel used in automobile production
 - Variable
- Wood used in furniture production
 - Variable
- Salaries for factory custodial staff
 - Fixed
- Depreciation of factory equipment
 - Fixed
- Lubricants for machines
 - Variable
- **Wages of production workers**
 - FIXED OR VARIABLE
 - If their salary depends on how many hours they work or how much they produce, it's variable

Lecture 2

Cost Volume Profit Analysis

- **Assumptions**
 - We sell exactly what we produce (no extra or shortage)
 - All costs are either fixed or variable
- **Breakeven equation**
 - Fixed Cost/Contribution Margin per Unit
- **Target profit equation**
- **CVP taxes**
- **CVP Equation (Cost Volume Profit)**
 - $Target\ Quantity = \left(\frac{target\ profit}{1 - Tax\ Rate} + Fixed\ Cost \right) / Contribution\ Margin\ Per\ Unit$
 - If you wanted to find out how many units you have to sell to gain \$_____
 - Ex. If you wanted to find out how many units to sell to breakeven, the target profit would be 0
 - If you wanted to find out how many units to sell to gain \$50, the target profit would be 50
 - If only pre-tax income is given, it would be (pre-tax income + TFC)/Contribution margin
- **Contribution Margin per Unit**
 - Selling price per unit - all variable costs per unit
- **Contribution Margin Ratio**
 - Contribution Margin per Unit/Selling Price per Unit
 - For every sales dollar, this is the fraction that goes toward covering (fixed?) costs

Cost Classification and Target Profit

- Code each item as fixed or variable cost
- Add up all variable costs
- Add up all fixed cost
- Divide variable costs by units produced to get variable cost per unit
- When classifying:
 - Ex. Carpenter labour vs. salary
 - Salary is always fixed
 - Carpenter labour would be variable because their pay could depend on how much they produce or how many hours worked since it doesn't specify that it is a salary

Practice Problems

- Maureen can contract out deliveries to an outside supplier who would charge a fixed fee of \$180,000 + \$1.90/km. At what annual number of delivery km will Maureen be indifferent, assuming the existing level of fixed costs would drop to \$200,000 making TFC under the contracting out provision equal \$380,000?
 - $2.1x + 280,000 = 1.9x + 380,000$; $x = 500,000$ km

BU247: Lecture 4Multiproduct CVP Analysis

- Extends single product CVP to organizations producing and selling more than one product
- Assumptions:
 - Sell all that you produce
 - Costs are either fixed or variable
 - Variable costs per unit are constant
 - Price per unit is constant
 - As the total volume of sales increases, the product mix remains constant
- Approaches (can use any one that you want in an exam)
 - Weighted average contribution margin
 - Keep intermediate numbers, don't round
 - Bundle approach
 - Assume that you can't buy products individually, only in a bundle
 - Pick any bundle size you want
 - Substitution approach

Question 3-31 – Weighted Average Contribution Margin

- Contribution Margin
 - Alligators: \$12
 - Dolphins: \$15
- Product Mix
 - Alligators: 70%
 - Dolphins: 30%
- **Step 1: Compute the weighted average contribution margin**
 - $WACM = (12)(70\%) + (15)(30\%) = \12.90
- **Step 2: Divide Fixed Cost + Target Income by WACM**
 - $(FC + \uparrow\uparrow)/WACM$
 - Total Unit Sales = $1,290,000/12.90 = 100,000$ units
- **Step 3: Determine required sales of each unit**
 - Sales of Alligators:
 - (% product mix) (total sales)
 - $(70\%)(100,000) = 70,000$
 - Sales of Dolphins:
 - $(30\%)(100,000) = 30,000$

Bundle Approach

- **Step 1: Pick a bundle size**
 - Picked a bundle size of 10 → 7A, 3D
- **Step 2: Compute bundle contribution margin**
 - $(7 \text{ Alligators})(12) + (3 \text{ Dolphins})(15) = \129

- **Step 3: Compute required bundle**
 - (Fixed Cost + Target Profit)/Bundle Contribution Margin
 - = $(1,290,000 + 0)/129 = 10,000$
- **Step 4: Compute required product sales**
 - (# Bundle) (# Units of the product in bundle)
 - Alligators:
 - $(10,000) (7) = 70,000$
 - Dolphins:
 - $(10,000) (3) = 30,000$

Substitution Approach

- **Step 1: Write income equation**
 - (Alligator Sales) (12) + (Dolphin Sales) (15) – 1,290,000 = 0
- **Step 2: Convert and rearrange**
 - Can convert this equation; convert dolphin sales to alligator sales
 - $(A) (12) + (3/7)(D) (15) = 1,290,000$
 - $(84A + 45A)/7 = 1,290,000$
 - $A = (1,290,000 * 7)/129 = 70,000$

Aylmer Consumer Products

- **Bundle Approach**
 - Bundle size: 66 (36 custom, 30 supreme)
 - Custom
 - \$13.40, 54.5% sales
 - Selling price per unit subtract all costs per unit to get \$13.50
 - Supreme
 - \$14.50, 45.5% sales
 - Selling price per unit subtract all costs per unit to get \$14.50
 - Bundle Contribution Margin
 - $(13.4) (36) + (14.5)(30) = \917.40
 - Required Bundles:
 - $800,000/917.4$
 - 800,000 = Total fixed costs
 - Required Product Sales
 - Custom
 - $(872.03) (0.545) = 475$ units
 - Supreme
 - $(872.03) (0.545) = 397$ units

Question 3-52

- a)
 - Contribution Margin per Passenger = $200 - 5 = 195$
 - $(70)(195x - 500) - 400,000 = 0$
 - $x = 55$
- b)
 - 60% full out of 150 seats = 90 passengers
 - $(70)(195x - 5000) - 400,000 = 0$
 - $x = 72$

Lecture 5

Relevant Cost Method

- A cost or revenue that changes as a result of making a decision

Make or Buy Decision

- Deciding whether to produce a product or service yourself or acquire it from someone else
- Considerations:
 - Financial
 - Compare the inside costs saved to the outside costs incurred
 - Other
 - On time delivery
 - Quality
 - If it's defected, that will fall on the assembler
 - Long term reliability
- Ask yourself:
 - What costs do I avoid by buying outside?
 - What cost do I incur when buying outside?
- Motivation: Lower cost and higher quality

Problem: 3-39 (Make or Buy)

- Assumption of behaviour of overhead costs: Fixed overhead is incurred regardless
 - Fixed overhead isn't relevant because it does not change
 - If it is relevant/avoidable/changes, it will say "Fixed Overhead Avoidable" or "Fixed Overhead Attributable"
 - Avoidable costs: direct materials, direct labor, variable overhead
- Total Cost: $73.10 - 6.90 = \$66.2$, but external supplier has quoted \$64.50 so you should outsource
- Other Factors relevant to this decision: Quality, on-time delivery?

Langdon Company

- \$60,000 salary is not relevant because that person is going to work regardless if you contract out or not
 - 2 managers if you continue to produce
 - 1 manager if you contract out
- Maximum (ceiling) price Langdon Company should accept:
 - Internal Cost Per Unit:** $\$110 + 80 + 20 = \210
 - $210 + 10 + 25 = \$245$
 - $20,000/2000 = 10$
 - $50,000/2000 = 25$
 - OR $210 + [(20,000+50,000)/2000] = \245 per unit

Drumbo Engineering

- Manufacturing overhead fixed = \$280,000
 - \$140,000 is not avoidable
 - \$60,000 is avoidable if assembly is discontinued
 - \$80,000 is not relevant so ignore it because the salary would stay the same regardless if it was discontinued or not
- **Variable Cost = \$370,000**
 - 70,000 (20% of 350,000)
 - 125,000
 - 175,000
- **Costs Avoided by Buying Outside**
 - $\$370,000/165,000x + 60,000 + 65,000 = \$3.5x$
 - x = level of production units

BU247 Lecture 7

Costs of Manufacturing Costs

- Consists of direct materials and direct labour
 - Directly traced to a specific product
 - Ex. Materials needed to create a product
- Manufacturing Overhead (MOH): Manufacturing costs that cannot be traced directly to specific units produced
- Variable MOH
 - Ex. Electricity, supplies used in assembly plant
- Fixed MOH
 - Ex. Salary
- Incremental Cost = “Additional Cost”
- **Opportunity Cost = Loss of contribution margin on regular orders**

Special Order Defined

- A special order is a one-time order that is not considered part of the company’s normal ongoing business
- Short-term decision in that whether or not a special order is accepted, the capacity level cannot be changed
 - Fixed costs will not change because of this
 - Ex. Planes still have to take off even if not all seats are taken, still have to pay the crew members and flight attendants

Different Profit Equations

- Profit = (Sales – VC) – FC
- Profit = CM – FC
- Profit = (Unit Selling Price – Unit VC) (Quantity) – FC

Exercise 2-57 (Page 63)

- Unit variable cost = $720,000/1600 = 450$
 - Profit = $(500 - 450) (2000) - 75,000 = \$25,000$
- $\Delta\text{Profit} = (480 - 450) (200) = \6000
- $\Delta\text{Profit} = (480 - 450) (600) - (500 - 450) (200)$
 - Giving up something to produce the new customer’s order is an example of opportunity cost**
 - $(500 - 450) (200)$ is the opportunity cost
 - 200 is coming from the difference between 2000 and 1600 and the customer wants to buy 600

Place a Bid

- A company is selling a lens for \$50. The variable production cost is \$10, the fixed production cost is \$18 per unit and the variable selling cost is \$1. A customer has

requested a special order for 10,000 units of the lens to be imprinted with the customer's logo. This special order would not involve any selling costs, but the company would have to purchase an imprinting machine for \$50,000. Assume there is ample idle capacity to fulfill the order and the imprinting machine has no further use after this order.

- You are the manager. What is the minimum price/floor price below which you would not go in negotiations with the customer?
- **Solution**
 - Don't consider fixed cost because it's not relevant
 - Don't include variable selling cost because the order came to you, you didn't incur any selling costs
 - $\$50,000/10,000 = \$5 \rightarrow$ Cost per unit of using the imprinting machine
 - ANSWER: $\$10 + \$5 = \$15$

Place a Bid (Under a Different Assumption)

- Assume there is no extra capacity to fulfill the order and the imprinting machine has no further use after this order. What is the minimum price/floor price below which you would not go in negotiations with the customer?
 - Floor price = Incremental cost + opportunity cost
 - $= (\$10 + 5) + (50 - 10 - 1) = 54$
 - $= \$54 > 50$
 - Contribution margin will be lost as a result of accepting the special order

Centrum Manufacturing (mylearningspace)

- a) Floor price = incremental cost + opportunity cost
 - a. No opportunity cost
 - b. Additional Direct Materials Cost: 15
 - c. Additional Direct Labour is 0.2 hours
 - d. Floor Price = $(40 + 15) + (1.5 + 0.2) * 20 = \89
- b) Opportunity Cost = $(1.5 + 0.2) (60/1.5) = \$68$
 - a. Add opportunity cost + answer in part a)
 - b. Answer = $\$89 + \$68 = \$157$

Decision Rule

- Only consider the **incremental cost** (additional cost that will incur if accepting the special order) in determining the minimum/floor price of the special order
- However, a company must determine whether it has sufficient capacity to produce the special order
 - If not, accepting the special order will cut into regular production, in which case **opportunity cost** needs to be considered

France's Floral Shop (mylearningspace)

- a) Minimum/floor price = $1200 + (6)(18) + (14)(30) = \1728
- b) Short by 4 designer hours

- a. 4 hours / 15 mins or 0.25 hours = 16
- b. Answer = $1728 + 16(15-6) = \$144$

BU247: Lecture 8: Product Mix DecisionProduct Mix Decision

- Nature of the product mix decision
- Product contribution margin
 - Never maximize profit, because fixed costs are included here; *maximize contribution margin*
- Contribution margin per unit of the constraining factor of production

How to Solve

- Identify contribution margin of all products
- Divide that number by hours for a per unit basis

Simcoe Valves Company

- 1) Standard Production Sales: $(0.95) (25000) = \$23,750$
 - Multiply by 10 (its contribution margin)
 - $\$237,500$
 Deluxe Production Sales: $(0.95) (18000) = \$20,520$
 - Multiply by 12 (contribution margin)
 - $\$205,200$
 Total: $\$442,700$
 - Subtract this by 400,000 which is the Fixed Cost
 - $= \$42,700$
- 2) Weighted Contribution = 10.4372
 $= 400,000/10.4372$
 $= 36,909.8712$ units

$$\begin{aligned} \text{Standard Units} &= (0.5814) (36,909.8712) \\ &= 21,460 \end{aligned}$$

$$\begin{aligned} \text{Deluxe Units} &= (1 - 0.5814) (36,909.8712) \\ &= 15,451 \end{aligned}$$

- 3) Contribution Margin/Unit – Standard: $10/0.2 = 50$
 Deluxe: $12/0.25 = 48$

$$\text{Standard: } 25,000 \times 0.2 = 5000$$

$$\text{Deluxe: } 16,100 \times 0.25 = 4025$$

Optimal production plan: is to produce 25,000 units of standard and 16,100 of deluxe

Opportunity Cost: of diverting MH is $\$48/\text{MH}$

Produce all of S you can sell (which is 25,000) using 5000 machine hours and leaving 4025 MH (Machine hours)

- 4) Floor Price = $25 + 0.15 \times 48 = \$32.30 < \33
 Accept offer and divert $(2000 \times 0.15)/0.25 = 1200$ units of C

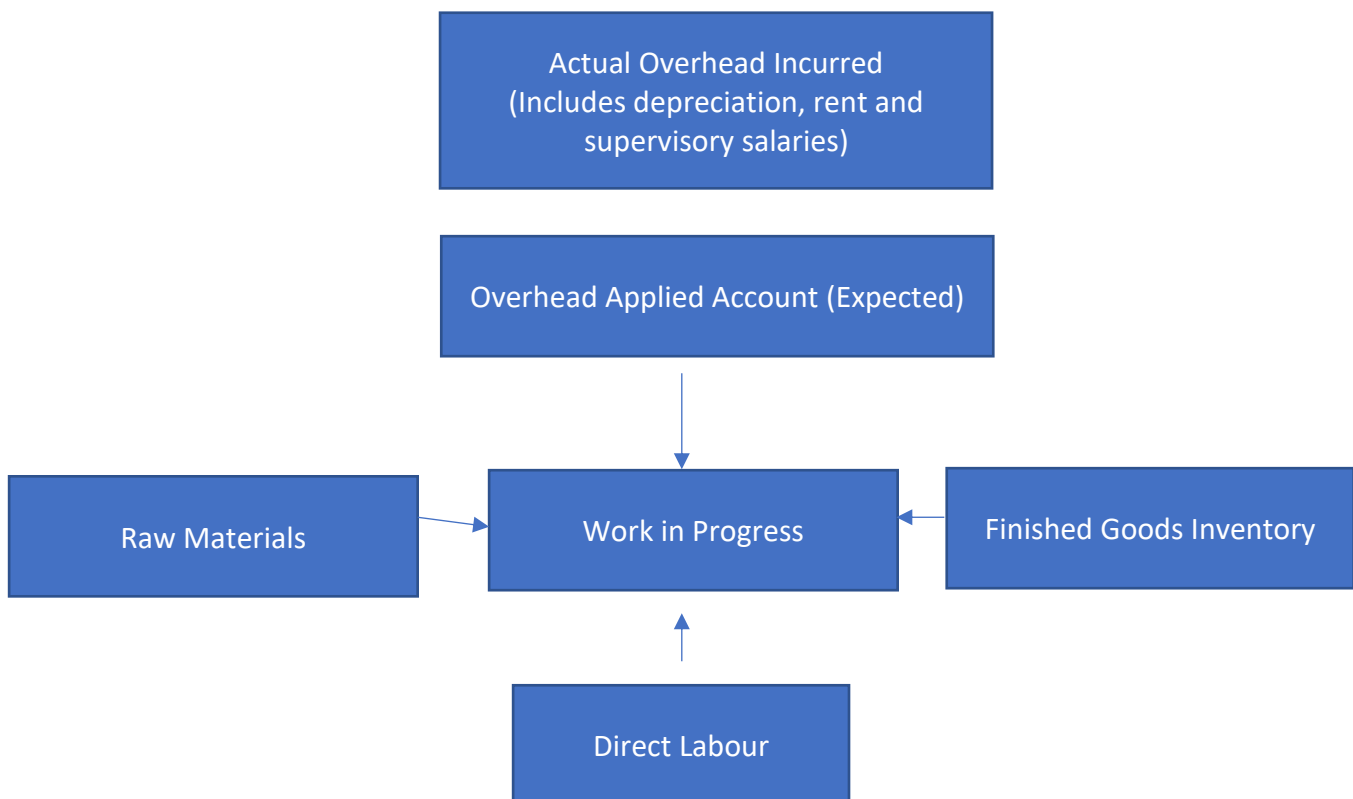
Lecture 9: Indirect Costs, Job Costing and Cost Drivers

Job Costing

- Job cost sheet is when you're provided a customized service
- Contains 3 things: Direct Materials, Direct Labour and Manufacturing Overhead
- Direct materials, direct labour as incurred; they are *charged* because whatever you consume or use, you are being charged for it
- Manufacturing overhead is allocated, not charged
- **Cost driver** is the thing that's used to allocate overhead to a job
- **Cost Driver Rate** = Expected Overhead/Cost Driver Quantity

Allocation Process

- What's allocated isn't what has occurred, it's a share of the expected overhead of the year



Example 3-25

- Rate per Machine Hour = Estimated Manufacturing Overhead/Cost Driver Quantity
- Cost driver would be machine hours

Example 4-30

- Cost Driver Rate for the Machine Department: $350,000/14,000 = \$25/\text{machine hour}$
- Cost Driver Rate for the Finishing Department: $280,000/350,00 = 80\%$ of DL cost

- Total Costs of Job 101: \$12,340

Cost Driver

- Theoretical Capacity
 - Never achievable because of maintenance and scheduling
 - Pros: Highlights total cost of unused capacity
- Practical Capacity
 - Used in denominator
 - Pro: Highlights total cost of unused capacity
 - Cons: Will usually result in unallocated manufacturing overhead
- Average Capacity Use
 - Pro: Attempts to allocate, on average, all expected manufacturing overhead
 - Con: Does not highlight the cost of unused usable capacity
- Planned Capacity Use
 - Pro: Attempts to allocate each year all expected manufacturing overhead
 - Con: Can result in a death spiral and will result in annual rate changes

BU247 Lecture 10Example 4-31

- a) Plantwide cost driver rate = Plantwide Overhead/Plantwide Direct Labor Hours
 a. $60,000/4000 = \$15$ per direct labor hour
- b) Cost Driver Rate for Assembly (Based on Direct Labor Hours)
 a. $35,000/3 = \$11.67$ per direct labor hour
 Cost Driver Rate for Cutting (Based on Direct Labor Hours)
 b. $25,000/1000 = \$25$ per direct labor hour
- c) The company may favor method in b) if overhead costs in cutting department have a cause and effect relationship with machine hours, while those in the assembly department have a cause and effect relationship with direct labor hours. The company may use method in a) because it is simpler than method in b) which is potentially more accurate

4-41

| | Job 101 | Job 102 | Job 103 |
|--------------------------|--|---|----------------------|
| Opening Inventory | 25,500 | 32,400 | |
| Department 1 | | | |
| Materials | 40,000 | 26,000 | |
| Labour | 6000 (500 x \$12 an hour) | 4800 (400 x 12) | |
| Overhead | 60,000 (150% of direct materials cost) | 39,000 (1.5 x 26,000) for 150% of direct materials cost | |
| Total | \$106,000 | \$69,800 | |
| Department 2 | | | |
| Materials | 3000 | 5000 | |
| Labour | 3600 | 4500 (250 x 18) | |
| Overhead | 9600 (\$8 per machine hour, 1200 x 8) | 12,000 | |
| Total | \$16,200 | \$21,500 | |
| Department 3 | | | |
| Materials | 0 | 0 | |
| Labour | 22,500 | 27,000 | |
| Overhead | 45,000 | 2400 | |
| Total | \$67,500 | 29400 | |
| Total for Job | \$215,200 | \$204,700 ???? | \$303,000 ??? |

Ayr Company

- Compute the plant-wide manufacturing overhead rate assuming that the company uses direct labour hours capacity and planned manufacturing overhead
 - $(1,656,000 + 645,000 + 854,000) / (5500 + 9200 + 9700) = \129.30
- Molding
 - $1,656,000 / 12,750 = \$129.9$
- Trimming
 - $645,000 / 9200 = \$70.1$
- Painting
 - $854,000 / 9700 = \$88$
- 1. Job Cost = \$2496
- 2. Job Cost = \$2257

BU247 Lecture 11

Process Costing

Equivalent Units of Production Calculation

- 200 units
 - 100% complete with respect to materials
 - 40% complete with respect to conversion costs
- Equivalent Units
 - Material: $100\% * 200 = 200$ equivalent units
 - Conversion: $40\% * 200 = 80$ equivalent units
- Convert physical units into equivalent units so that it bears the cost of a full unit

Five Steps in Process Costing

- Identify the physical flow
- Compute equivalent units of production
- Accumulate production costs
- Compute the production cost per equivalent unit of production
- Assign production costs to ending work in process and goods completed and transferred out
- **Process Costing Terms**
 - Types of costs in process costing:
 - Materials
 - Conversion costs
 - Labour
 - Overhead
 - Rate of incurring costs
 - Both types of costs can be incurred at any stage of the production process
 - It is common to measure the stage of completion by the percentage completion of conversion costs
- Percent Completion is used to calculate equivalent units
 - Equivalent Units = (Percent Completed) (Physical Units)

Equivalent Units Idea

- If there are units in ending work in process, they are not completed
- Issue is to decide how to allocate production costs between partially completed and completed units of production

Cambridge Company (MLS)

- Materials and Conversion Costs fall under Equivalent Units
- Cost per Equivalent Unit

| Physical Flow | Physical Units | Materials | Conversion Costs |
|---|-------------------|------------------|------------------|
| Percentage Completion - Ending Inventory | | 100% | 60% |
| Opening work in process | 0 | | |
| Started this period | <u>25,000,000</u> | | |
| Units to account for | 25,000,000 | | |
| Completed and transferred out | 23,000,000 | 23,000,000 | 23,000,000 |
| Ending work in process | <u>2,000,000</u> | <u>2,000,000</u> | <u>1,200,000</u> |
| Units accounted for | 25,000,000 | | |
| Work done this period | | 25,000,000 | 24,200,000 |

Foster Company (MLS)

| Physical Flow | Physical Units | Materials | Conversion Costs |
|---|----------------|-------------|---|
| Percentage Completion - Ending Inventory | | 100% | 20% |
| Opening work in process | 20,000 | | |
| Started this period | <u>80,000</u> | | |
| Units to account for | 100,000 | | |
| Completed and transferred out | 95,000 | 95,000 | 95,000 |
| Ending work in process | <u>5000</u> | <u>5000</u> | <u>1000</u> (20% of Ending work in process) |
| Units accounted for | 100,000 | 100,000 | |
| Work done this period | | 100,000 | 96,000 |

Beek Manufacturing

| Physical Flow | Physical Units | Materials | Conversion Costs |
|---|----------------|-------------|---|
| Percentage Completion - Ending Inventory | | 100% | 50% |
| Opening work in process | 1000 | | |
| Started this period | <u>9000</u> | | |
| Units to account for | 10,000 | | |
| Completed and transferred out | 7000 | 7000 | 7000 |
| Ending work in process | <u>3000</u> | <u>3000</u> | <u>1500</u> (50% of Ending work in process) |
| Units accounted for | 10,000 | | |
| Work done this period | | 10,,000 | 8500 |

Centre City Products

| Physical Flow | Physical Units | Materials | Conversion Costs |
|---|----------------|-------------|---|
| Percentage Completion - Ending Inventory | | 100% | 20% |
| Opening work in process | 4000 | | |
| Started this period | <u>20,000</u> | | |
| Units to account for | 24,000 | | |
| Completed and transferred out | 18,000 | 18,000 | 18,000 |
| Ending work in process | <u>6000</u> | <u>6000</u> | <u>2000</u> (20% of Ending work in process) |
| Units accounted for | 24,000 | | |
| Work done this period | | 24,000 | 19,200 |

BU247: Lecture 12**Process Costing Part 2**Five Steps in Process Costing

- Identify the physical flow
- Compute equivalent units of production
- Accumulate production costs
- Compute the production cost per equivalent unit of production
- Assign production costs to ending work in process and goods completed and transferred out

Cambridge Company

| Physical Flow | Physical Units | Materials | Conversion Costs |
|--|-------------------------------|------------------|-------------------------|
| Percentage Completion - Ending Inventory | | 100% | 60% |
| Opening work in process | 0 | | |
| Started this period | <u>25,000,000</u> | | |
| Units to account for | 25,000,000 | | |
| Completed and transferred out | 24,000,000 | 24,000,000 | 24,000,000 |
| Ending work in process | <u>1,000,000</u> | <u>1,000,000</u> | <u>24,600,000</u> |
| Units accounted for | 25,000,000 | | |
| Work done this period | | 25,000,000 | 24,600,000 |
| | Total Production Costs | Materials | Conversion Costs |
| Costs in Opening Inventory | 0 | 0 | 0 |
| Costs incurred this period | <u>746,000</u> | <u>500,000</u> | <u>246,000</u> |
| Costs incurred to date | 746,000 | 500,000 | 246,000 |
| Divide by equivalent units of work this period | | 25,000,000 | 24,600,000 |
| Cost per equivalent unit | \$0.03 | \$0.02 | \$0.01 |
| Total Costs to Account for | \$746,000 | | |
| Cost Allocation | | | |

| | | | |
|----------------------------------|-----------------------------|--|--|
| Work in process ending inventory | | | |
| - Materials | 20,000 (1,000,000*0.02) | | |
| - Conversion Costs | <u>6000</u> | | |
| - Total work in Process | 26,000 | | |
| Completed and transferred out | | | |
| - Materials | \$480,000 (24,000,000*0.02) | | |
| - Conversion Costs | <u>240,000</u> | | |
| - Total Cost Transferred Out | <u>720,000</u> | | |
| | <u>746,000</u> | | |
| Total costs accounted for | | | |

Beek Manufacturing

| Physical Flow | Physical Units | Materials | Conversion Costs |
|-------------------------------|-------------------------------|------------------|---|
| Percentage Completion | | 100% | 50% |
| - Ending Inventory | | | |
| Opening work in process | 1000 | | |
| Started this period | <u>9000</u> | | |
| Units to account for | 10,000 | | |
| Completed and transferred out | 7000 | 7000 | 7000 |
| Ending work in process | <u>3000</u> | <u>3000</u> | <u>1500</u> (50% of Ending work in process) |
| Units accounted for | 10,000 | | |
| Work done this period | | 10,000 | 8500 |
| | Total Production Costs | Materials | Conversion Costs |
| Costs in Opening Inventory | 10,000 | 4000 | 6000 |
| Costs incurred this period | <u>30,000</u> | <u>10,000</u> | <u>20,000</u> |
| Costs incurred to date | 40,000 | 14,000 | 26,000 |

| | | | |
|--|-------------------------------|--------|------------|
| Divide by equivalent units of work this period | | 10,000 | 8500 |
| Cost per equivalent unit | 4.4588 (Sum of the 2) | 1.4 | 3.05882353 |
| Total Costs to Account for | 40,000 | | |
| Cost Allocation | | | |
| Work in process ending inventory | | | |
| - Materials | 4200 (3000*1.4) | | |
| - Conversion Costs | <u>4588</u> (1500*3.05882353) | | |
| - Total work in Process | 8588 | | |
| Completed and transferred out | | | |
| - Materials | 9800 (7000*1.4) | | |
| - Conversion Costs | <u>21,412</u> (7000*3.05882) | | |
| - Total Cost Transferred Out | 31,212 | | |
| Total costs accounted for | \$40,000 | | |

Centre City

| Physical Flow | Physical Units | Materials | Conversion Costs |
|--|-------------------------------|------------------|---|
| Percentage Completion - Ending Inventory | | 100% | 20% |
| Opening work in process | 4000 | | |
| Started this period | <u>20,000</u> | | |
| Units to account for | 24,000 | | |
| Completed and transferred out | 18,000 | 18,000 | 18,000 |
| Ending work in process | <u>6000</u> | <u>6000</u> | <u>1200</u> (20% of Ending work in process) |
| Units accounted for | 24,000 | | |
| Work done this period | | 24,000 | 19,200 |
| | Total Production Costs | Materials | Conversion Costs |
| Costs in Opening Inventory | 28,320 | 16,000 | 12,320 |
| Costs incurred this period | <u>108,000</u> | <u>32,000</u> | <u>76,000</u> |
| Costs incurred to date | 136,320 | 48,000 | 88,320 |
| Divide by equivalent units of work this period | | 24,000 | 19,200 |
| Cost per equivalent unit | \$6.60 | \$2 | \$4.6 |
| Total Costs to Account for | 136,320 | | |
| Cost Allocation | | | |
| Work in process ending inventory | | | |
| - Materials | 12,000 (6000 x 2) | | |
| - Conversion Costs | 5520 (1200 x 4.6) | | |
| - Total work in Process | 17,520 | | |
| Completed and transferred out | | | |
| - Materials | 36,000 | | |

| | | | |
|------------------------------|---------|--|--|
| - Conversion Costs | 82,800 | | |
| - Total Cost Transferred Out | 118,800 | | |
| Total costs accounted for | 136,320 | | |