

# Final Exam Review

Accounting 200 // Winter 2023

# Important Final Exam Info

- NEW LOCATION: The final exam will be held in **Room 144 of the Richards Building (RB 144)**.
- **The deadline has been extended to 8:00 pm.** This means that you must enter the testing room by 8:00 pm. The testing room closes at 10:00 pm.
  - First attempt: April 21 - April 22
  - Second and third attempt: April 24 - April 26
- Review answer key to Final Exam - First Attempt in Harmon building
  - Starting Monday at 9:00am

# Question Breakdown

36 Questions

58% managerial accounting  
42% comprehensive / financial

Module 2	2 questions
Module 3	2 questions
Module 4	2 questions
Module 6	1 question
Module 7	3 questions
Module 8	2 questions
Module 9	3 questions
Module 11	6 questions
Module 12	6 questions
Module 13	5 questions
Module 13	4 questions

# Cost accounting - T-account flows and journal entries

## Module 11

Raw Materials			WIP Inventory			Finished Goods			Overhead		
Beg. Balance	120	90	Beg. Balance	58	292	Beg. Balance	35	245	Indirect Labor	59	125
Materials Purchased	100	70	Direct Materials	90		Finished Goods	292		Indirect Materials	70	
			Direct Labor	110					Other indirect costs (rent, utilities, etc.)	98	
			Applied Overhead	125							
	60			91			82			102	

Work-in-Process Inventory    90  
     Raw Materials Inventory    90  
*(Putting direct materials from raw materials inventory into production)*

Overhead    70  
     Raw Materials Inventory    70  
*(Putting indirect materials from raw materials inventory into production - Actual overhead cost)*

Work-in-Process Inventory    125  
     Overhead    125  
*(Applied manufacturing overhead into Work-in-Process Inventory)*

Finished Goods Inventory    292  
     Work-in-Process Inventory    292  
*(Finished goods transferred from Work-in-Process Inventory to Finished Goods Inventory)*

Cost of Goods Sold    245  
     Finished Goods Inventory    245  
*(Finished Goods sold)*

125 applied - 102 actual =  
 OVERHEAD \$23 OVERAPPLIED

Overhead    23  
     Cost of Goods Sold    23  
*(Closing/Adjusting entry for Overhead)*

# Calculating predetermined overhead rate

## Module 11

1. Select driver (direct labor hours)
2. Compute predetermined overhead allocation rate

$$\frac{\text{total expected overhead costs}}{\text{total expected driver level}}$$

- a. Expected overhead examples: indirect labor, indirect materials, factory utilities, depreciation on manufacturing equipment

# Module 11 Practice

Company X uses direct labor hours to apply overhead to manufacturing jobs. The company has the following expectations for the coming year.

- Indirect labor: \$250,000
- Direct labor: \$575, 000
- Direct labor hours: 25,000 hrs
- Machine hours: 20,000 hrs
- Indirect materials: \$200,000
- Direct materials: \$150,000
- Factory depreciation: \$125,000

The actual costs were as follows

- Indirect labor: \$280,000
- Direct labor: \$560, 000
- Direct labor hours: 28,000 hrs
- Machine hours: 22,000 hrs
- Indirect materials: \$175,000
- Direct materials: \$200,000
- Factory depreciation: \$125,000

A. Calculate the predetermined overhead rate

# Module 11 Practice

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- Indirect labor: \$250,000
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- Machine hours: 22,000 hrs
- Indirect materials: \$175,000
- Direct materials: \$200,000
- Factory depreciation: \$125,000

A. Calculate the predetermined overhead rate

1. Driver: direct labor hours

$$\frac{\$(250,000 + 200,000 + 125,000)}{25,000 \text{ hrs}}$$

**Rate = \$23 / hour**

B. Ask: how could this question be trickier?

- Other expected overhead costs that would be included in denominator

# Applying overhead to a specific job

## Module 11

1. Select driver (direct labor hours)
2. Compute predetermined overhead allocation rate

$$\frac{\text{total expected overhead costs}}{\text{total expected driver level}}$$

3. Applied overhead = predetermined rate × actual driver level used



# Module 11 Practice

Company X uses direct labor hours to apply overhead to specific manufacturing jobs. The company has the following expectations for the coming year.

- Indirect labor: \$250,000
- Direct labor: \$575, 000
- Direct labor hours: 25,000 hrs
- Machine hours: 20,000 hrs
- Indirect materials: \$200,000
- Direct materials: \$150,000
- Factory depreciation: \$125,000

Job #13 took 17 hours of actual labor and 12 machine hours.

A. How much overhead should be applied to Job #13? What is the journal entry?

# Module 11 Practice

Company X uses direct labor hours to apply overhead to specific manufacturing jobs. The company has the following expectations for the coming year.

- Indirect labor: \$250,000
- Direct labor: \$575, 000
- Direct labor hours: 25,000 hrs
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- Indirect materials: \$200,000
- Direct materials: \$150,000
- Factory depreciation: \$125,000

Job #13 took 17 hours of actual labor and 12 machine hours.

A. How much overhead should be applied to Job #13? What is the journal entry?

1. Predetermined rate: \$23 / hour
2. \$ 23 x 17 direct labor hours =

**\$391 applied**

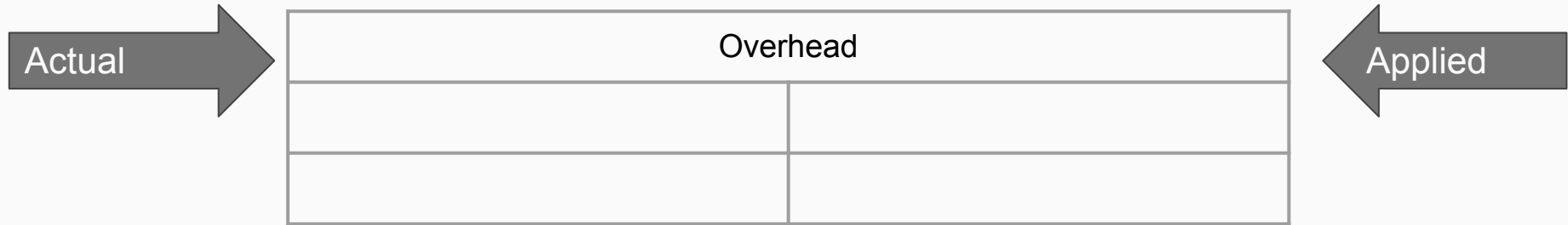
Journal entry:

WIP Inventory      391

Overhead      391

# Close under- or over-applied overhead

## Module 11

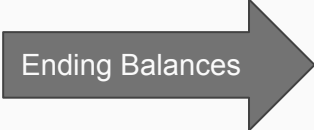


- Close to COGS
  - Under-applied: DEBIT Cost of Goods Sold, CREDIT Overhead
  - Over-applied: DEBIT Overhead, CREDIT Cost of Goods Sold

# Close under- or over-applied overhead

## Module 11

Overhead	
140	190
65	
205	190



Ending Balances

# Close under- or over-applied overhead

## Module 11

Overhead	
140	190
65	
205	190
	15
	205

Ending Balances

COGS

15

Overhead

15

# Keep vs. Drop Product Line

## Module 12

- Set up a table
- Think through each line item
- Read all notes (we will not try to trick you)

# Keep vs. Drop

## Module 12

BYU is considering closing down the Blue Line Deli and gathers the following data to help make the decision:

- Revenue: \$900
- Variable Cost: \$600
- \*Direct Avoidable Fixed Cost: \$250
- \*\*Indirect Fixed Cost: \$300

\*The direct avoidable fixed costs will be eliminated if the product line is closed.

\*\*The indirect fixed costs are 50% avoidable.

If BYU closes the Blue Line Deli, they can rent the space to Raising Canes for \$550 per month

By how much will overall net income change if BYU decides to close the Blue Line?

	Keep	Close

- A. Net income will increase by \$500 if the product line is discontinued
- B. Net income will increase by \$650 if the product line is discontinued
- C. Net income will decrease by \$650 if the product line is discontinued
- D. Net income will decrease by \$650 if the product line is discontinued

# Keep vs. Drop

## Module 12

BYU is considering closing down the Blue Line Deli and gathers the following data to help make the decision:

- Revenue: \$900
- Variable Cost: \$600
- \*Direct Avoidable Fixed Cost: \$250
- \*\*Indirect Fixed Cost: \$300

\*The direct avoidable fixed costs will be eliminated if the product line is closed.

\*\*The indirect fixed costs are 50% avoidable.

If BYU closes the Blue Line Deli, they can rent the space to Raising Canes for \$550 per month

By how much will overall net income change if BYU decides to close the Blue Line?

	Keep	Close
Revenue	900	0
Variable Cost	(600)	0
Direct Fixed	(250)	0
Indirect Fixed	(300)	(150)
Rent Revenue	0	550
	<b>(250)</b>	<b>400</b>

B. Net income will **increase** by **\$650** if the product line is discontinued



# Make vs. Buy

## Module 12

- Set up a table
- Think through each line item
- Read all notes (we will not try to trick you)

## Make vs. Buy

# Module 12

Microsoft assembles surface pros and is considering buying the computer chip instead of manufacturing them. Microsoft found a manufacturer who will sell them the chip for \$9.00 per chip.

Cost information related to the manufacture of the chip is as follows:

- Direct Materials: \$5.50 / unit
- Direct Labor: \$2.00 / unit
- Variable Manufacturing Overhead: \$0.75 / unit
- Fixed Manufacturing Overhead: \$1.50 / unit

Microsoft estimates sales of \$5,000 units per year. Each unit requires 1 microchip

By how much will overall net income change if Microsoft decides to stop making the parts itself and buys it from the supplier?

[illegible]

# Make vs. Buy

## Module 12

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- Direct Materials: \$5.50 / unit
- Direct Labor: \$2.00 / unit
- Variable Manufacturing Overhead: \$0.75 / unit
- Fixed Manufacturing Overhead: \$1.50 / unit

Microsoft estimates sales of \$5,000 units per year. Each unit requires 1 microchip

By how much will overall net income change if Microsoft decides to stop making the parts itself and buys it from the supplier?

	Make	Buy
Direct Materials	27,500 (5.50 * 5,000)	0
Direct Labor	10,000 (2.00 * 5,000)	0
Variable Manufacturing Overhead	3,750 (0.75 * 5,000)	0
Fixed Manufacturing Overhead	7,500 (1.50 * 5,000)	7,500 (1.50 * 5,000)
Purchase Microchip	0	45,000 (9.00 * 5,000)
<b>Total Cost</b>	<b>48,750</b>	<b>52,500</b>

Net income will **decrease** by **\$3,750** if the chip is purchased instead of made.

# CVP Analysis

## Module 12

*(sales price × units) (variable cost × units)*



*Sales revenue – variable cost – fixed costs = profit*



*contribution margin*

Set to TARGET  
INCOME or ZERO  
for break-even  
analysis.

# CVP

## Module 12

A test proctoring company is hiring you to do a CVP analysis for them. They have fixed costs per month of \$12,000 and give 1,000 tests per month.

If their variable costs are \$12 per test, what price should they set to BREAKEVEN?

# CVP

## Module 12

A test proctoring company is hiring you to do a CVP analysis for them. They have fixed costs per month of \$12,000 and give 1,000 tests per month.

If their variable costs are \$12 per test, what price should they set to BREAKEVEN?

$$1,000(\text{sales price}) - 1,000(12) - 12,000 = 0$$

$$1,000(\text{sales price}) - 12,000 - 12,000 = 0$$

$$1,000(\text{sales price}) = 24,000$$

$$\text{Sales price} = \$24$$

# CVP

## Module 12

The following data are for Zach Company:

- Net Income at 35,000 units: \$225,000
- Variable Cost Ratio: 60%
- Fixed Costs: \$13,000

What is the selling price per unit?

# CVP

## Module 12

The following data are for Zach Company:

- Net Income at 35,000 units: \$225,000
- Variable Cost Ratio: 60%
- Fixed Costs: \$13,000

What is the selling price per unit?

$$\text{Variable Cost Ratio} = \text{VC} / \text{SR}$$

$$\text{SR} * \text{Ratio} = \text{VC}$$

$$\text{SR} - .6(\text{SR}) - 13,000 = 225,000$$

$$.4(\text{SR}) = 238,000$$

$$238,000 / .4 = 595,000$$

$$\$595,000 / 35,000 \text{ units} = \$17 \text{ per unit}$$

$$\$17 * .60 = 10.2 \text{ Variable Costs per unit}$$



# Budgeting

## Module 13

- Production Budget
- Raw Materials Budget
- Cash Collection Forecast

# Production Budget

## Module 13

On September 30 of Year 1, Abinadi Company had finished goods inventory of 2,200 units. Starting in October, Abinadi intends to have an inventory policy of maintaining ending inventory at the end of every month equal to the next two months of sales. For example, ending inventory at the end of October should be equal to the forecasted sales in November and December. Forecasted sales for the months October, Year 1 through January, Year 2 are as follows:

- October 6,000: units
- November: 4,500 units
- December: 8,500 units
- January: 2,000 units

What is the amount of budgeted PRODUCTION for November?

	October	November
Need		
(Have)		
<b>= Make</b>		

# Production Budget

## Module 13

On September 30 of Year 1, Abinadi Company had finished goods inventory of 2,200 units. Starting in October, Abinadi intends to have an inventory policy of maintaining ending inventory at the end of every month equal to the next two months of sales. For example, ending inventory at the end of October should be equal to the forecasted sales in November and December. Forecasted sales for the months October, Year 1 through January, Year 2 are as follows:

- October 6,000: units
- November: 4,500 units
- December: 8,500 units
- January: 2,000 units

What is the amount of budgeted PRODUCTION for November?

	October	November
Need	19,000 $6,000 + 4,500 + 8,500$	15,000 $4,500 + 8,500 + 2,000$
(Have)	(2,200) Beginning Balance	(13,000) $4,500 + 8,500$
<b>= Make</b>	<b>16,800</b>	<b>2,000</b>

	October	November
Sales	6,000	4,500
Beg Inv	2,200	13,000
Needed Production	$13,000 + 6,000 - 2,200 = 16,800$	$10,500 + 4,500 - 13,000 = 2,000$
Ending Inv	13,000	10,500

# Raw Materials Budget

## Module 13

On April 30 of Year 1, Gibeah Company had raw materials inventory of 750 pounds. Starting in May, Gibeah intends to have an inventory policy of maintaining ending raw materials inventory at the end of every month equal to the next TWO months' production needs. For example, ending inventory at the end of May should be equal to forecasted raw materials needs for June production plus forecasted raw materials needs for July production. Three pounds of raw materials are needed in the production of one finished unit. Forecasted PRODUCTION from May, Year 1 through August, Year 1 is as follows:

- May: 2,000 units
- June: 3,500 units
- July: 4,000 units
- August: 2,700 units

What is the amount of budgeted RAW MATERIALS PURCHASES for June?

	May	June
Need		
(Have)		
= Buy		

# Raw Materials Budget

## Module 13

On April 30 of Year 1, Gibeah Company had raw materials inventory of 750 pounds. Starting in May, Gibeah intends to have an inventory policy of maintaining ending raw materials inventory at the end of every month equal to the next TWO months' production needs. For example, ending inventory at the end of May should be equal to forecasted raw materials needs for June production plus forecasted raw materials needs for July production. Three pounds of raw materials are needed in the production of one finished unit. Forecasted PRODUCTION from May, Year 1 through August, Year 1 is as follows:

- May: 2,000 units
- June: 3,500 units
- July: 4,000 units
- August: 2,700 units

What is the amount of budgeted RAW MATERIALS PURCHASES for June?

	May	June
Need	<b>28,500</b> $2,000 + 3,500 + 4,000 = 9,500$ units $9,500 * 3 \text{ lbs} = \mathbf{28,500 \text{ lbs}}$	<b>30,600</b> $3,500 + 4,000 + 2,700 = 10,200$ units $10,200 * 3 \text{ lbs} = \mathbf{30,600 \text{ lbs}}$
(Have)	<b>(750)</b> Beginning Balance	<b>(22,500)</b> $3,500 + 4,000 = 7,500$ units $7,500 * 3 \text{ lbs} = \mathbf{22,500 \text{ lbs}}$
<b>= Buy</b>	<b>18,250 lbs</b>	<b>8,100 lbs</b>

# Cash Collections Forecast

## Module 13

It is January 1 of Year 2. Sales for Andrew Company for January, February, and March are forecasted to be as follows: January \$250,000 February \$400,000 March \$550,000 Of these sales 10% are CASH sales and the rest are CREDIT sales. Of these credit sales, 20% are collected during the month of sale, 50% in the following month, 25% in the second following month, and 5% are uncollectible. TOTAL sales for November and December of Year 1 were \$300,000 and \$600,000, respectively.

What is the forecasted amount of total CASH COLLECTIONS in February?

	November	December	January

# Cash Collections Forecast

## Module 13

It is January 1 of Year 2. Sales for Andrew Company for January, February, and March are forecasted to be as follows: January \$250,000 February \$400,000 March \$550,000 Of these sales 10% are CASH sales and the rest are CREDIT sales. Of these credit sales, 20% are collected during the month of sale, 50% in the following month, 25% in the second following month, and 5% are uncollectible. TOTAL sales for November and December of Year 1 were \$300,000 and \$600,000, respectively.

What is the forecasted amount of total CASH COLLECTIONS in February?

	November	December	January	February
Cash Collections from Cash Sales	$300,000 \times 10\% = 30,000$	$600,000 \times 10\% = 60,000$	$250,000 \times 10\% = 25,000$	$400,000 \times 10\% = 40,000$
Cash Collections for this month	$300,000 \times 90\% \times 20\% = 54,000$	$600,000 \times 90\% \times 20\% = 108,000$	$250,000 \times 90\% \times 20\% = 45,000$	$400,000 \times 90\% \times 20\% = 72,000$
Cash Collections from last month		$300,000 \times 90\% \times 50\% = 135,000$	$600,000 \times 90\% \times 50\% = 270,000$	$250,000 \times 90\% \times 50\% = 112,500$
Cash Collections from two months ago			$300,000 \times 90\% \times 25\% = 67,500$	$600,000 \times 90\% \times 25\% = 135,000$
<b>Total</b>			<b>407,500</b>	<b>359,500</b>

# Comprehensive Topics

- Asset Valuation
- Sorting Balance Sheet Accounts
- Format of IS
- Retained Earnings
- Journal Entry Questions
- SOCF
- Statement of Equity
- Dupont Formula
- Cash Gap Formula
- Accruals Ratio
- Effective vs Average vs Marginal



# Four Valuation Models

## Module 2

- **Historical Cost:** Original transaction value
  - Land, Inventory, Intangibles with an Infinite Useful Life (Trademarks)
- **Amortized Cost:** Historical Cost with adjustment for Cost Allocation
  - Prepaid Expenses, PP&E (Net of Accumulated Depreciation), Intangibles with a Finite Useful Life (Patents)
- **Net Realizable Value:** Amount of Cash that an Asset is expected to be converted into
  - Accounts Receivable (Net of Allowance)
- **Fair Value:** Price that would expected to be received if the Asset was sold in an Orderly Market in an Arms-Length Transaction
  - Investment securities

# Balance Sheet

## Module 2 and 3

$$\text{Assets} = \text{Liability} + \text{Equity}$$

**Asset:** A present right of an entity to an economic benefit. Generally results in cash inflow.

**Liability:** A present obligation of an entity to transfer or provide an economic benefit. Many require a transfer of cash, some require providing goods and services.

**Equity:** Remaining claim against the assets of a business, after the liabilities have been satisfied.

# Composition of the Balance Sheet

Current Assets

Non-Current Assets

**Assets**

Current Liabilities

Non-Current Liabilities

Contributed Capital

Earned Capital

**Liabilities + Equity**

=

# Example of Balance Sheet Accounts

Current Assets: Cash, Accounts Receivable,  
Inventory, Prepaid Expenses, Investments

Non-current Assets: Property, Plant and  
Equipment, Land, Intangibles, Operating Lease

Current Liabilities: Accounts Payable, Accrued  
Liabilities, Current Portion of Short-Term Debt

Non-current Liabilities: Long Term Debt

Contributed Capital: Common Stock, Preferred  
Stock

Earned Capital: Retained Earnings

# Income Statement - Gross Profit

## Module 4

**Gross Profit:** Tells us whether revenues are sufficient to cover the costs that can be directly tied to the product being sold during the period

**Operating Income:** Tells us whether revenues are sufficient to cover the costs of all operating expenses (direct and indirect)

**Non-operating items:** Activities that arise outside of the normal course of business (financing and investing activities)

Sales revenue

(Cost of goods sold)

**Gross profit**

(Operating expenses)

**Operating income**

(Non-operating income and expense)

# Income Statement - Pretax & Net income

**Pretax income:** Tells us whether revenues are sufficient to cover all operating and non-operating expenses, net of any non-operating income

**Net income:** Tells us whether revenues are sufficient to cover all the costs of business (including income taxes)

Sales revenue

(Cost of goods sold)

**Gross profit**

(Operating expenses)

**Operating income**

(Non-operating income and expense)

**Pretax income**

(Income tax expense)

**Net income**

# Retained Earnings

## Module 7

- Retained Earnings: Amount of Net Income that a company has earned since it began operations that has not been paid out to stockholders as Dividends, but rather has been retained in the company
- Ending Retained Earnings = Beginning Retained Earnings + Net Income - Dividends
- This account will always carry a balance from year to year

# Retained Earnings

In the first year of operation, Anna Company had revenue of \$12,500 and expenses of \$7,250. They also paid \$2,900 in dividends. In year 2 they had revenue of \$17,750 and expenses of \$12,500. That year they paid \$1,300 in dividends. What is the Retained Earnings balance for the end of year 2?

1. Solve for the Retained Earnings in Year 1
  - a. Solve for Net Income for Year 1

$$\text{Net Income} = \text{Revenue} - \text{Expenses}$$

$$\text{Net Income} = 12,500 - 7,250 = \mathbf{\$5,250}$$

- b. Solve for RE at the end of the year

$$\text{Ending RE} = \text{Beginning RE} + \text{NI} - \text{Dividends}$$

$$\text{Ending RE} = 0 + 5,250 - 2,900 = \mathbf{\$2,350}$$

2. Solve for the Retained Earnings in Year 2
  - a. Solve for Net Income in Year 2

$$\text{Net Income} = \text{Revenue} - \text{Expenses}$$

$$\text{Net Income} = 17,750 - 12,500 = \mathbf{\$5,250}$$

- b. Solve for RE at the end of the year

$$\text{Ending RE} = \text{Beginning RE} + \text{NI} - \text{Dividends}$$

$$\text{Ending RE} = 2,350 + 5,250 - 1,300 = \mathbf{\$6,300}$$



# Financial Statement Effects

## Module 4

We prepay \$2,400 for the next 12 months of insurance. On December 31, we have used up 4 months of this prepaid insurance.

Cash		+	Non-cash Assets		=	Liabilities		+	Contributed Capital		+	Retained Earnings			Revenues				-	Expenses		=	Net Income	
-2,400			2,400																					
Cash			Prepaid Insurance																					
			-800										-800								800			-800
			Prepaid Insurance																		Insurance Expense			

# Journal Entry for the Sale of Inventory

## Module 6

Account Name	Debit	Credit
Cash / Accounts Receivable	yy	
Revenue		yy
Cost of Goods Sold	xx	
Inventory		xx

# Journal Entries - During the Period

Sold inventory costing \$3,000 for \$5,000 cash

Account Name	Debit	Credit
Cash	5,000	
Revenue		5,000
Cost of Goods Sold	3,000	
Inventory		3,000

# Linking statement of equity and balance sheet

## Module 7

	At Dec 31, 20X1
Cash	50
Other assets	450
Total assets	500
Liabilities	310
Stock	150
Retained earnings	40
Total liab. & equity	500

	Dec 31, 20X2
Retained earnings 20X1	40
+Net income	100
-Dividends	-60
Retained earnings 20X2	80

	At Dec 31, 20X2
Cash	110
Other assets	480
Total assets	590
Liabilities	330
Stock	180
Retained earnings	80
Total liab. & equity	590

# Equity

- Equity Section of Balance Sheet
  - Comprised of Stock and Retained Earnings
  - Stock is both Common Stock and APIC
  - Treasury Stock is a CONTRA-Equity
- Statement of Equity
  - Shows the changes in equity over the year both in RE and CS
  - Stock issuance, dividends, net income, stock buybacks

	Dec 31, 20X2
Retained earnings 20X1	40
+Net income	100
-Dividends	-60
Retained earnings 20X2	80

# Format of Statement of Equity

	Common Stock	+	APIC	-	Treasury Stock	+	Retained Earnings	=	Total Equity
Beginning Balance	10		290		(50)		400		650
Stock Issuances	1		49						50
Stock Buybacks					(5)				(5)
Net Income							1,000		1,000
Dividends							(800)		(800)
<b>Ending Balance</b>	<b>11</b>		<b>339</b>		<b>(55)</b>		<b>600</b>		<b>895</b>

# Review of Dupont Ratios

## Module 8

$$\frac{\text{Net Income}}{\text{Total Equity}} = \frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}} \times \frac{\text{Total Assets}}{\text{Total Equity}}$$

Return on Equity  
"Performance"

Profit Margin  
"Profitability"

Asset Turnover  
"Efficiency"

Assets to Equity  
"Leverage"

# Review of Dupont Ratios

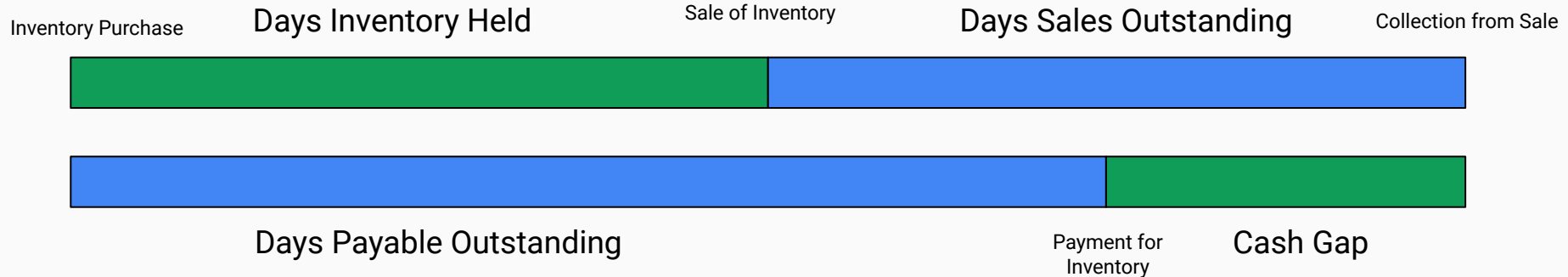
- **Return on Equity/Performance (Net Income/Total Equity)**
  - The income generated during the period per dollar of stockholders' equity.
- **Profit Margin/Profitability (Net Income/Sales)**
  - The income generated during the period per dollar of sales. How much is left over from sales after paying for all of the expenses.
- **Asset Turnover/Asset Efficiency (Sales/Total Assets)**
  - The sales generated during the period per dollar of assets. How efficiently a company uses their assets to generate sales.
- **Assets to Equity/Financial Leverage (Total Assets/Total Equity)**
  - The amount of assets a company has per dollar of stockholders' equity. How much the company has borrowed to purchase its assets.



# Cash Gap

## Module 8

- Number of days a company is “out” of cash from operations
  - How much short term borrowing is required for a company
- $\text{Cash Gap} = \text{Days Inventory Held} + \text{Days Sales Outstanding} - \text{Days Payable Outstanding}$



# Cash Gap

- Turnover ratio is always in the denominator
  - How many times in one period we went through all of an account
- Days Inventory Held
  - $\text{Days in Period} / (\text{COGS} / \text{Inventory})$
- Days Sales Outstanding
  - $\text{Days in Period} / (\text{Sales} / \text{AR})$
- Days Payable Outstanding
  - $\text{Days in Period} / (\text{COGS} / \text{AP})$

# Accrual to asset ratio

## Module 9

- Accruals are created to comply with Accrual Accounting
  - Accounts Receivable
- $\text{Accruals} = \text{Net Income} - \text{Operating Cash flow}$ 
  - Operating Cash Flow captures CASH FLOW from operations
- $= (\text{Net Income} - \text{Operating Cash Flow}) / \text{Total Assets}$
- Negative Ratio
  - More income-decreasing entries
  - Could be taking a big bath
- Positive Ratio
  - More income-increasing entries
  - Could be pumping up income

# Effective vs. average vs. marginal tax rate

## Module 9

- **Effective Tax Rate**
  - $\text{Tax Liability} / \text{All Income}$
  - If a taxpayer doesn't have tax exempt income, the average and effective rates will be the same
- **Average Tax Rate**
  - $\text{Tax Liability} / \text{Taxable Income}$
- **Marginal Tax Rate**
  - Tax Rate applied to the next addition increment of income

# Effective vs. average vs. marginal tax rate practice

You make \$17,500 this year of taxable income and \$10,000 of tax-exempt income. The tax brackets are as follows:

- \$0-2,500 = 0%
- \$2,501-15,000 = 10%
- \$15,001-25,000 = 25%
- \$25,000+ = 35%

What are the average, effective and marginal tax rates?

- **Tax Paid**
  - First Bracket -  $2,500 \times 0\% = \$0$
  - Second Bracket -  $15,000 - 2,500 \times 10\% = \$1,250$
  - Third Bracket -  $17,500 - 15,000 \times 25\% = \$625$
  - Fourth Bracket -  $\$0$
  - Total Taxes =  $\$0 + \$1,250 + \$625 + \$0 = \mathbf{\$1,875}$
- **Average Tax Rate**
  - Total Tax/Taxable Income
  - $\$1,875/\$17,500 = \mathbf{10.71\%}$
- **Effective Tax Rate**
  - Total Tax/All Income
  - $\$1,875/\$27,500 = \mathbf{6.82\%}$
- **Marginal Tax Rate**
  - Tax rate of the next dollar earned
  - **25%**

# Bonus Topics

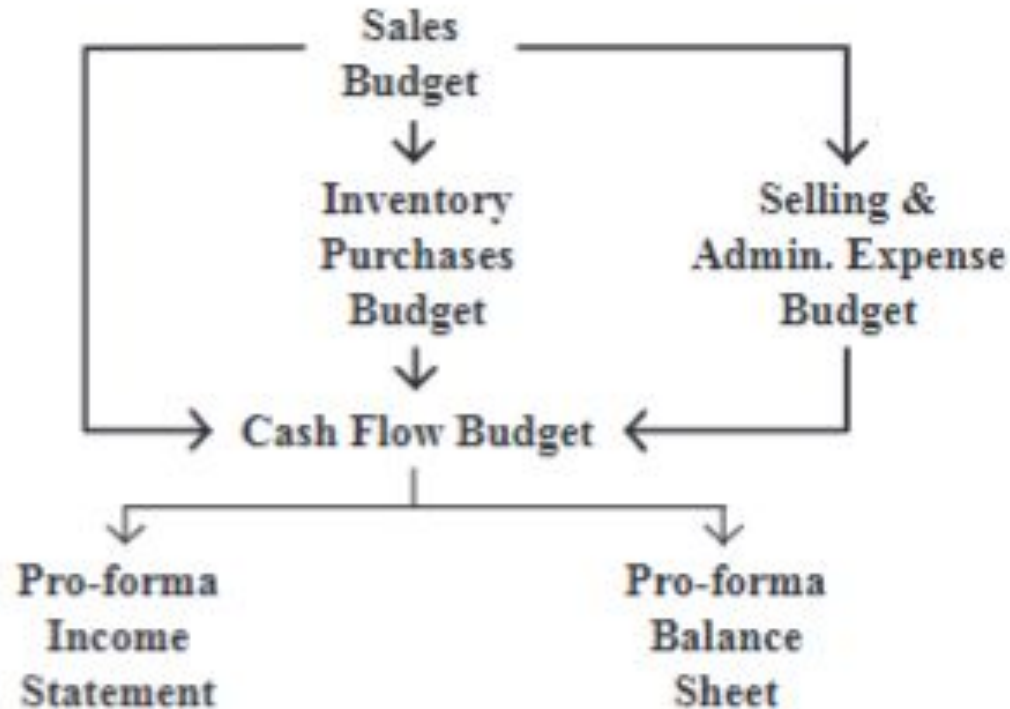
- Product vs Period Cost
- Discontinued Product
- Sequence of Budgets
- Balance Scorecard
- Elements of EY Mindset
- ESG
- Detective vs Preventative Controls

# Product vs Period Costs

## Module 11

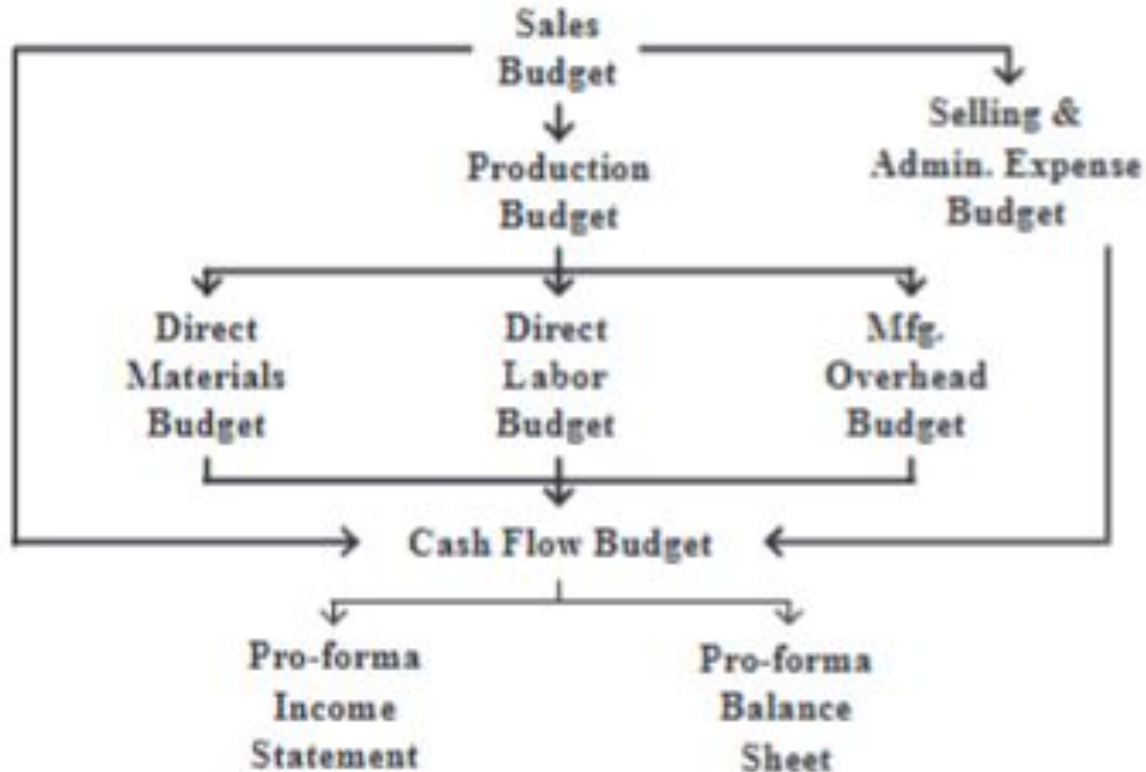
- **Product Costs - Costs associated with making or buying a product**
  - Tracked as assets on the balance sheet
  - Direct and indirect labor and materials
  - Rent, Depreciation, and Maintenance of Factory Building and Equipment
- **Period Costs - Selling and Administrative costs of operating a business**
  - Tracked as expenses on the income statement
  - Office staff wages, selling and admin expenses

# Sequence of Budgets - Merchandising





# Sequence of Budgets - Manufacturing



# Preventative vs Detective Controls

## Module 9

- Preventative - to keep errors in accounting from occurring in the first place
  - Separation of duties
  - Physical controls - assets locked up
  - Proper Authorization
  - Systems Controls and Safeguard - Passwords
- Detective - to detect errors and fraud that has already occurred
  - Report Review
  - Data Analytics
  - Reconciliation
  - Internal Audits

# Discontinuation of a product

## Module 12

- What happens to the income statement when a product is discontinued?

# Discontinuation of a product

## Module 12

- What happens to the income statement when a product is discontinued?
  - Net income or loss on discontinued segment is presented in its own line

Income Statement	
NET SALES	\$ 4,358,100
COST OF SALES	2,738,714
GROSS PROFIT	1,619,386
SELLING AND OPERATING EXPENSES	560,430
GENERAL AND ADMINISTRATIVE EXPENSES	293,729
TOTAL OPERATING EXPENSES	854,159
OPERATING INCOME	765,227
OTHER INCOME	900
GAIN (LOSS) ON FINANCIAL INSTRUMENTS	5,513
(LOSS) GAIN ON FOREIGN CURRENCY	(12,649)
INTEREST EXPENSE	(18,177)
INCOME BEFORE TAXES	740,874
INCOME TAX EXPENSE	257,642
NET INCOME	\$ 483,232

Discontinued segment

Revenues  
Expenses  
Net income

# Elements of EY Analytics Mindset

## Module 14

1. Ask the right questions.
2. Extract, transform and load relevant data (i.e., the ETL process).
3. Apply appropriate data analytics techniques.
4. Interpret and share the results with stakeholders.

# ESG Reporting

## Module 7

**Environmental:** How does my company impact the environment?

- Greenhouse gas emissions
- Energy and fuel management
- Air quality

**Social:** How does my company impact people?

- Labor relations
- Diversity and inclusion
- Human rights
- Employee health and safety

**Governance:** Does my company operate with integrity & ethics?

- Business ethics
- Conflicts of interest
- Political influence
- Illegal practices

# Balanced Scorecard

## Module 14

### ECI's Balanced Business Scorecard

#### Financial Perspective

##### GOALS

Survive  
Succeed

##### MEASURES

Cash flow  
Quarterly sales growth  
and operating income  
by division  
Increased market share  
and ROE

#### Customer Perspective

##### GOALS

New  
products

Responsive  
supply  
Preferred  
supplier

Customer  
partnership

##### MEASURES

Percent of sales from new  
products  
Percent of sales from  
proprietary products  
On-time delivery (defined  
by customer)  
Share of key accounts'  
purchases  
Ranking by key accounts  
Number of cooperative  
engineering efforts

#### Internal Business Perspective

##### GOALS

Technology  
capability  
Manufacturing  
excellence

Design  
productivity  
New product  
introduction

##### MEASURES

Manufacturing geometry  
vs. competition  
Cycle time  
Unit cost  
Yield  
Silicon efficiency  
Engineering efficiency  
Actual introduction  
schedule vs. plan

#### Innovation and Learning Perspective

##### GOALS

Technology  
leadership  
Manufacturing  
learning  
Product  
focus  
Time to  
market

##### MEASURES

Time to develop next  
generation  
Process time to maturity  
Percent of products that  
equal 80% sales  
New product introduction  
vs. competition