Chapter 8 – Accounting for Long-Term Assets
MGMT 1A

I. Plant Assets
   A. Tangible – something you can t*ouch*_____
   B. Actively used in operations *laptop computer: merchandise inventory to HP; PP&E to Netflix*
   C. Expected to benefit the f*uture*_____ *(more than one accounting period)*

II. Management's Concerns: Buying vs. Leasing

Leasing: Cheaper in the short run; good if you like getting new things; if the asset will be completely used up by the end of the lease term.

Buying: Cheaper in the long run; like buying a car, and driving it into the ground; better if you don't care about having the latest and greatest version

III. Acquisition
   A. Example: We buy a new satellite dish to use at home. What additional costs might we incur in connection with the purchase?

		Necessary & Ordinary?	
Cost	$20,000	*Yes*	
Sales Tax	*$2,000*	*Yes*	*CAPITALIZE*
Delivery	*$1,000*	*Yes*	
Installation	*$500*	*Yes*	
Insurance	*$750*	*NO*	*← The satellite dish will still work w/o it*
Couch	*$1,000*	*No*	
Drinks	*$50*	*No*	*EXPENSE*
Snacks	*$50*	*No*	
Nintendo Switch	*$300*	*No*	
Games	*$300*	*No*	

   B. Rule: All costs which are _*necessary and ordinary*_____ to get an asset __*ready*____ for its _*intended use*_ are capitalized. *← Means "added to an asset" account. "Necessary" is most important criteria*

   C. Entry:

PP&E *$23,500*
Cash *$23,500*
(Record Purchase of satellite dish, sales tax, delivery and installation)

Expense *XX*
Cash *XX*
(Record all other purchases not necessary and ordinary for satellite dish)

D. Second Rule: Costs are expensed over the period that we benefit from them *Depreciation*

E. Accounting choices for costs (the acquisition of something):

1. C*apitalize (add to an asset account)*_____

2. E*xpense*_____

F. Lump Sum Purchase - Land and Building together *(Land is not depreciated)*

1. Relative Market Values method

2. Example: Company paid _*$90,000*___ to acquire a building with a market value of __*$60,000*_ and land with a market value of _*$40,000*_. Prepare the journal entry to record the transaction.

Building	*$54,000*	*← ($90,000 * 60%)*
Land	*$36,000*	*← ($90,000 * 40%)*
Cash	*$90,000*	

IV. Depreciation – A systematic and rational allocation of an asset's cost (less residual value) over the useful life.

A. What Depreciates? Land Improvements *fences, plumbing or fiber optic cable*

B. Example:
1. Cost of Asset _*$6,100*____
2. Estimated Salvage Value _*$100*_____
3. Useful life __*5 years*___
4. Estimated Units of Production __*200,000 units*___

C. Methods *for calculating depreciation*
1. Straight Line

(Cost – Salvage Value)
Useful Life

($6,100 - $100) / 5 years = $1,200

DR: Depreciation Expense $1,200
CR: Accumulated Depreciation $1,200
(To record annual depreciation of asset)

2. Units of Production

(6,100 – 100) / 200,000 units = $0.03 per unit

Year 1 – we make _*10,000*____ units

*DR: Depreciation Expense $300 ← $0.03 * 10,000 units*
CR: Accumulated Depreciation $300

Year 2 – we make _*110,000*_____ units

*DR: Depreciation Expense $3,300 ← $0.03 * 110,000 units*
CR: Accumulated Depreciation $3,300

Year 3 – we make _*30,000*____ units

*DR: Depreciation Expense $900 ← $0.03 * 30,000 units*
CR: Accumulated Depreciation $900

3. Accelerated Methods = More depreciation taken in the earlier years – do not subtract salvage! Just depreciate UP TO salvage value, then stop.

   a. Double Declining Balance (DDB) - do not subtract salvage
   *Depreciation Expense = (2 / Useful Life) * Book Value*

Year	Book Value *	Rate =	Depreciation Expense	Accumulated Depreciation
1	*$6,100*	*2/5*	*$2,440*	*$2,440*
2	*($6,100 - $2,440)*	*2/5*	*$1,464*	*$2,440 + $1,464 = $3,904*
3	*($6,100 - $3,904)*	*2/5*	*$878*	*$3,904 + $878 = $4,782*
4	*($6,100 - $4,782)*	*2/5*	*$527*	*$4,782 + $527 = $5,309*
5	*($6,100 - $5,309)*	*N/A*	*$691 (PLUG)*	*$5,309 + $691 = $6,000*

Depreciate the asset UP TO the salvage value.

   b. MACRS (used for tax purposes) – do not subtract salvage value
   Uses a ½ year convention to smooth out when purchases occur throughout the year

   *(2 / Useful Life) * ½ * Book Value ← Apply the ½ in the FIRST YEAR ONLY!*

Year	Book Value *	Rate =	Depreciation Expense	Accumulated Depreciation
1	*$6,100*	*2/5 * 1/2*	*$1,220*	*$1,220*
2	*($6,100 - $1,220)*	*2/5*	*$1,952*	*$1,220 + $1,952 = $3,172*
3	*($6,100 - $3,172)*	*2/5*	*$1,171*	*$3,172 + $1,171 = $4,343*

   c. Book vs. Tax

   Company HAS TO use MACRS for Tax purposes
   MACRS/Tax Code – assigns the useful life to be used

D. Balance Sheet Presentation

Property Plant & Equipment	*$6,100*
Less: A/D	*($1,200)*
PP&E, net	*$4,900*

** If presented net, disclose accumulated depreciation in footnotes*

V. Revision of Estimates

A. Example: On __*1/1*__ we purchased an asset for _*$850*___ with a salvage value of _*$50*____ and a useful life of_*8*__ years. Calculate yearly straight-line depreciation for the asset.

($850 - $50) / 8 = $100 per year

B. Revision: At the beginning of Year _*3*___, we now believe the salvage value will be ___*$100*____ and the new useful life will be _*7*__ years (total). Calculate yearly straight-line depreciation for the asset for the remaining useful life.

2 years have already passed. Remaining useful life = 7 – 2 = 5 years
Cost remaining to depreciate:
$850 - $100 (depreciation Y1) - $100 (depreciation Y2) - $100 (salvage) = $550
Annual depreciation: $550 / 5 = $110

What is book value at the end of year 5?
$850 - $100 (Y1) - $100 (Y2) - $110 (Y3) - $110 (Y4) - $110 (Y5) = $320

-OR-

$110 Y6 + $110 Y7 + $100 Salvage = $320

VI. Costs After Acquisition – Repairs

A. Minor Repairs *– expensed as incurred*

1. Normal upkeep and maintenance
2. What would this be for a car? *Oil changes, new brakes, new wiper blades*
3. Anything that keeps it going
4. Usually recurring
5. Journal Entry to record:

Repairs and Maintenance Expense XX
Cash XX

B. Major Repairs *- capitalize*

1. Betterment – makes the asset better than before *faster, bigger, efficient*

a. Example: Copier machine – we add a part that will now staple the page together after printing
b. Journal Entry to record:

Asset – copier XX
Cash XX
(To capitalize asset betterment)

c. Depreciating a betterment
(Book value before + capitalized amount – salvage value) / remaining useful life

2. Extraordinary Repairs
After the last major earthquake in 1994, UCLA retrofitted 4 of the original UCLA buildings, including Powell. All the books were moved from Powell to the IM field to "Temporary Powell" or "Towell". That was EXTRAORDINARY. But it didn't "better" Powell. It extended the useful life of Powell.

a. Journal Entry to record:

Accumulated Depreciation XX
Cash XX
(To record extraordinary repair)

C. Impact on Book Value *Book Value = (Cost – A/D)*

1. Minor Repair: *No change (because it's expensed)*

2. Betterment: *Increases book value (by increasing cost)*

3. Extraordinary Repair: *Increases book value (by decreasing A/D)*

D. Materiality – Relative Significance

1. Example: CEO of Google gets a 2nd computer monitor costing $300.
2. Example: $20 on the ground – do you stop to pick it up?
3. Example: Staying at the Beverly Hills Hotel – how many nights could you afford to stay?

CEO, CFO sets the threshold above which assets are capitalized; below which, purchases are expensed

VII. Periodic Depreciation

A. Example: Depreciate asset to the nearest month. Company purchased an asset on __*3/18*__

at a cost of _*$12,100*__. The asset has a salvage value of _*$100*_ and a useful life of

_*8*___ years. Calculate straight-line depreciation for Year 1 and Year 2.

($12,100 - $100) / 8 = $1,500 / year

*Y1: 9/12 * $1,500 = $1,125*
Y2: $1,500

What will be the LAST year the asset is depreciated and how much depreciation will be recorded in the last year?

*Y9: 3/12 * $1,500 = $375*

B. Units of Production depreciation

Only depends on the number of units produced. Acquisition date has no effect on calculation.

C. Calculate Double Declining Balance depreciation for Year 1 and Year 2.

Year	Book Value *	Rate =	Depreciation Expense	Accumulated Depreciation
1	*$12,100*	** 2/8 * 9/12*	*$2,269*	*$2,269*
2	*($12,100 - $2,269)*	** 2/8*	*$2,458*	*$2,269 + $2,458*

D. Calculate MACRS depreciation for Year 1 and Year 2, assuming tax code prescribes a 5 year useful life for this type of asset.

Year	Book Value *	Rate =	Depreciation Expense	Accumulated Depreciation
1	*$12,100*	**2/5 * 1/2*	*$2,420*	*$2,420*
2	*($12,100 - $2,420)*	**2/5*	*$3,872*	*$2,420 + $3,872*

VIII. Disposal of Assets

A. Scrap It

1. Loss

2. Breakeven

B. Sell It

1. Loss

2. Breakeven

3. Gain

IX. Disposal – Steps

A. Depreciate the asset up to date *(to the nearest month; JE right before the sale)*

B. Close out the asset account and related accumulated depreciation account

C. Record gain or loss on disposal, if any

D. Example: On *1/1/Y1* Company purchased an asset for *$15,500*. The asset had a salvage value of *$500* and a useful life of *5* years. On *9/10/Y3* the Company sells the asset for *$4,200*. The Company uses straight-line depreciation.

1. Depreciate the asset up to date
   ($15,500 - $500) / 5 = $3,000 per year

   *$3000 (Y1) + $3,000 (Y2) + ($3,000 * 8/12) = $8,000 Accumulated Depreciation*

2. Close out the asset and A/D

Loss on Sale	*$3,300*	*← PLUG*
A/D	*$8,000*	
Cash	*$4,200*	
PP&E	*$15,000*	

   (To record sale of equipment)

3. Record gain or loss on disposal, if any

   Book Value > Cash = Loss
   Book Value < Cash = Gain

X. Trade Ins

A. Example: Company had an asset that cost _*$20,000*__. Accumulated depreciation for this asset is _*$17,000*__. Company trades this asset for a new asset that costs _*$33,000*_. The seller gives company a trade-in allowance of _*$2,200*_ for the old asset.

Book value = ($20,000 cost - $17,000 A/D)

1. Predict gain, loss or break-even.
   Loss ($3,000 book value > $2,200 trade-in allowance)

   Prepare the journal entry to record the trade:

DR: PPE – New	*$33,000*	*← Fair Value*
DR: A/D – Old	*$17,000*	
DR: Loss	*$800*	*← PLUG*
CR: PPE – Old	*$20,000*	*← Historical Cost*
CR: Cash	*$30,800*	*← Sales price – trade in*

B. Same example, except trade-in allowance is _*$7,200*___ instead.

1. Predict gain, loss or break-even.
   Gain ($7,200 trade-in allowance > $3,000 book value)

2. Prepare the journal entry to record the trade:

DR: PPE – New	*$33,000*	*← Fair Value*
DR: A/D – Old	*$17,000*	
DR: Gain	*$4,200*	*← PLUG*
CR: PPE – Old	*$20,000*	*← Historical Cost*
CR: Cash	*$25,800*	*← Sales price – trade in*

XI. Natural Resources – D*epletion*_____

A. Similar to units of production depreciation method *dependent on units produced*

1. Total cost including exploration and development is part of depletion expense

2. Specialized plant assets may be required to extract the natural resource. These assets are recorded in a separate account and depreciated.

B. Example: Company purchased a mine for _*$2,500,000*_. The salvage value of the mine is _*$100,000*_ and the estimated units are _*80,000*__ tons. *Cost per ton = ($2.4M / 80K) = $30*

During the first year, Company extracted _*10,000*__ tons and sold _*9,000*___ tons.

C. Entry: (Comparison of __*buying (inventory/COGS)*____vs. __*extracting (depleting)*_____)

Inventory – Perpetual	**Depletion**
DR: Merchandise Inventory $300,000 *CR: Cash $300,000* *(10,000 tons at $30/ton)*	*DR: Depletion $300,000* *CR: Accumulated Depletion $300,000* *(Record A/D for units EXTRACTED)*
DR: COGS $270,000 *CR: Merchandise Inventory $270,000* *(9,000 tons at $30/ton)* *THERE WOULD ALSO BE A FIRST ENTRY:* *DR: A/R XX* *CR: Sales XX*	*DR: Depletion Expense $270,000* *CR: Depletion $270,000* *(Record expense related to units sold)* *THERE WOULD ALSO BE A FIRST ENTRY:* *DR: A/R XX* *CR: Sales XX*

What is the book value of the coal mine at the end of year 1?
$2,500,000 - $300,000 = $2,200,000

D. Depletion is expensed when the units are ____*sold*_____. *(Matching principle)*

XII. Intangible Assets

A. Types of balance sheet assets

1. C*urrent Assets*_____

2. L*ong-term Investments*_____

3. P*P&E*_____

4. I*ntangibles*____

5. O*ther Assets*_____

B. Amortize – experiencing *(expensing)* costs over their life

C. Examples of intangible assets

1. Patents – the right to produce a product

a. Legal life – _*20*_ years

b. Example: Imagine you invent the cure to the common cold. You are not in the business of developing, producing and marketing drugs. You sell the patent to Johnson and Johnson for __*$20M*____. Johnson's journal entry would be:

1/1/Y1 *DR: Patent $20M*
CR: Cash $20M

A: 12/31/Y1 *DR: Amortization Expense $1M*
CR: Accumulated Amortization – Patent $1M
(To record straight-line amortization of patent)

2. Copyright – the right to publish a written work or artwork

a. Legal life (will expire eventually) – depends on who holds the copyright:

i. Individual – life of author + _*70*_ years

ii. Corporation – _*95*__years from _*1st publication*_____

3. Franchise – right to operate or sell a specific brand of products *(e.g., McDonalds, 7-11)*
Amortize franchise fees over the life of the franchise agreement

4. Trademark – right to use a symbol or name of a product, are indefinitely renewable
NOT AMORTIZED – because you can just keep renewing

D. Rule: Intangible assets are amortized over their _*useful*____ life

E. Other Intangible assets

1. Leasehold improvements – permanent improvements to leased property, which have finite lives
   Rule: Amortize the improvement over the SHORTER of its useful life, or the lease term
2. Organization costs – costs of starting a corporation
3. Research and Development (R&D) *= looking for new stuff. Usually a VERY low percentage of efforts results in something marketable.*

   Therefore, R&D is expensed IMMEDIATELY
4. Goodwill – excess of cost (of buying a company) over the fair market value of net assets (means assets – liabilities) acquired

   a. Why? *When Disney acquired LucasFilm for $4B; net assets were only worth $2B. Why pay double? Because of the future value/benefit of what they were getting: Star Wars movies, Star Wars land at Disneyland, Mandalorian, Baby Yoda, etc.*

   b. When expensed

      i. Not amortized

      ii. Tested for __*impairment*____ each year *Covered in 120A*

   c. Example: I buy a Company for $100M. What am I buying?

Assets	Fair Value
Land	*$4M*
Equipment	*$8M*
Patents	*$80M*
Liabilities	*($2M)*
Total	*$90M*

   d. Allocating goodwill:

      i. Assign purchase price to fair value of assets acquired and liabilities assumed.

      ii. Assign any remainder to goodwill

   e. Journal entry to record acquisition:

DR: Goodwill	*$10M*	*← PLUG*
DR: Land	*$4M*	
DR: Equipment	*$8M*	
DR: Patents	*$80M*	
CR: Liabilities		*$2M*
CR: Cash		*$100M*

XIII. Financial Analysis

A. Asset Turnover Ratio

Net Sales .
Average Total Assets

B. Calculate Asset Turnover for Office Depot and Staples

		2017	2016
Office Depot	Total Assets	6,323	5,540
	Sales	10,240	11,021
Staples	Total Assets	8,271	10,172
	Sales	18,247	18,764

OD: 10,240 / [(6,323 + 5,540)/2] = 1.73

Staples: 18,247 / [(8,271 + 10,172)/2] = 1.98

C. Financial Statement Analysis

1. US GAAP vs. IFRS

Be careful when doing financial analysis: If the Companies are using GAAP vs. IFRS, the standards are different. For example:
IFRS – R&D is capitalized, not expensed
IFRS – LIFO is not allowed.