I. Characteristics of “Plant and Equipment”

A. Must be tangible property (have physical existence)

B. Must have useful life of over one year (future services)

C. Must be used in production or providing services

II. Acquisition of “Plant and Equipment”

A. Record at cost

1. Cost includes all NORMAL and REASONABLE expenditures necessary to get asset in place and ready for use

2. Assets self-constructed -- Cost includes material, labor, reasonable amount of overhead, design fees, permits, insurance, certain interest.

3. Lump Sum Acquisitions
   a. Allocate cost based on relative FMV of assets acquired

B. Common Subgroups (classes)

1. Land
2. Land improvements
3. Buildings
4. Equipment

III. Depreciation

A. System of accounting which allocates cost of plant and equipment (less salvage value) over the estimated useful life in a systematic and rational manner.

1. Complies with the matching principle

B. Journal entry to record

   Depreciation Expense XXX
   Accumulated Depreciation XXX

C. Factors affecting depreciation:

1. Cost

2. Residual or salvage value
   a. Estimate of portion of original cost we think will be recovered at end of asset’s service life (worth as scrap or expected trade-in value)
3. Useful life or service life
   a. Period of time we estimate we will use asset
      (1) May or may not equal potential life of asset
   b. Factors affecting useful life
      (1) Inadequacy -- capacity becomes too small
      (2) Obsolescence
      (3) Wear and tear

D. Various depreciation methods
1. Straight Line
   a. Allocates an equal portion of assets cost to each period. (Depreciation is function of time)
   b. Formula: \[
      \text{Cost} - \text{Salvage} = \text{Depreciation} \\
      \text{Useful Life} \quad \text{Each year}
   \]

2. Units of Production Method (units-of-activity or production)
   a. Depreciation is calculated on use of asset.
   b. Steps
      (1) \[
      \text{Cost} - \text{Salvage} = \text{Depreciation} \\
      \text{Estimated Total Units} \quad \text{Rate per Unit} \\
      \text{(Miles, hours, units, etc)}
      \]
      (2) Depreciation Rate per Unit \times \text{# of units in this period} = \text{Depreciation expense}

3. Declining Balance
   a. Depreciation of up to twice the straight line rate applied to the “Book Value” (without initially considering salvage value)
   b. Steps in computation (Double Declining Balance)
      (1) Calculate the straight line RATE
      (2) Double this rate
      (3) Apply this rate to book value of asset
         (a) Book value = Cost - Accumulated Depreciation
   c. Salvage value is NOT subtracted out initially. But you NEVER depreciate book value below salvage value.

4. Sum-of-the-Years’ Digits
   a. Multiply the depreciable balance (cost-salvage) by a fraction
      (1) Denominator is “sum-of-the-years-digits”
      (2) Numerator is years of assets’ life in reverse order (years of remaining service life from the beginning of the year)
   b. Easy way to find denominator
      (1) \[
      \frac{N(N+1)}{2} \quad \text{Or} \quad \frac{N+N^2}{2}
      \]

5. The last two methods are “Accelerated Methods”
   a. More depreciation recognized in beginning years
   b. Theoretical justification
      (1) Assets generally more efficient in early years -- so help generate more revenues
      (2) Results in a more equitable “use charge” -- as depreciation decreases, repairs and
          maintenance increases. So overall costs are constant.

IV. Special considerations about depreciation

A. Assets acquired or disposed of in the middle of a year.
   1. Must calculate depreciation for partial year
   2. Calculate for portion of year asset was placed in service
   3. Often calculated to nearest month.
   4. Be careful with S.Y.D. when asset acquired in middle of year. Fraction is applicable to
      years of physical life which will not correspond to fiscal year of business.

B. Disclosures required
   1. Cost and accumulated depreciation relating to major classes of plant and equipment
   2. Description of depreciation method(s) used.

C. Cost allocation procedure vs valuation procedure
   1. Balance sheet shows **undepreciated costs** which is **NOT** necessarily market value
   2. Justified by “going concern” principle

D. Change in estimates affecting depreciation
   1. Handle prospectively -- do not restate prior financial statements

2. Example of new calculation: (Example on page 389)
   \[
   \text{Remaining Book Value - Revised Salvage} = \text{Revised}
   \]
   \[
   \text{Remaining Estimated Useful Life} \quad \text{Depreciation}
   \]

E. Depreciation for Tax Purposes
   1. For assets acquired 1/1/81 -- 12/31/86 generally use ACRS
   2. For assets acquired after 12/31/86 generally use MACRS
   3. Generally, ACRS and MACRS are not GAAP
      a. Useful lives are considered too short

V. Costs subsequent to acquisition

A. Revenue Expenditure
   1. Maintain operational efficiency and **expected** productive life of asset (ordinary repairs --
      repair expense)

B. Capital Expenditure -- increase operating efficiency, productive capacity or expected useful life.
   (Benefit more than one period)
   1. Additions and improvements
   2. Extraordinary repair--lengthens useful life of asset--recovers some of prior depreciation
      claimed (debit accumulated depreciation)
   3. Depreciation must be recalculated after a capital expenditure
VI. Plant Assets

A. Disposal of plant assets
   1. Record depreciation up to date of disposal

   2. Disposal entry **ALWAYS** involves removal of old asset and related accumulated depreciation
      a. Discarding or junking (Retirement)
         (1) Book value is measure of loss

      b. Selling Plant Assets
         (1) Cash received vs. book value is gain or loss

   c. Exchanging plant assets
      (1) First you must consider the nature of the assets
         (a) Similar -- do the same thing (same function)
         (b) Dissimilar -- do not do the same thing

      (2) If dissimilar **ALWAYS** recognize gains and losses
         (a) Basis of new assets equals its FMV

      (3) If similar -- recognize losses but do **NOT** recognize gains (we are assuming pure exchange or we pay cash)
         (a) Gains are deferred and reduce basis of new asset
         (b) For tax purposes neither gains or losses are recognized

      (4) Gains and losses are measured by fair market value of assets surrendered vs. book value of assets surrendered

VII. Natural Resources

A. Examples -- timber, oil and gas, diamonds, etc...

B. Record at acquisition cost
   1. Cost to acquire and prepare it for its intended use (production)

C. As pumped, mined, cut, -- must record "depletion"
   1. Very similar to units-of-production method of depreciation
      a. Depletion rate per unit
         
         \[
         \text{Cost} - \text{Salvage} \\
         \text{Estimated Recoverable Units}
         \]

   (continued...
D. Depreciation applies to any tangible physical property used to extract resource
   1. Useful life depends on whether the equipment has alternative uses

VIII. Intangible Assets

A. No physical existence
B. Recorded at cost when acquired
   1. Can only be recorded on books when purchased, self developed intangible assets cannot be recorded!!!
      a. Research and development costs are expensed as incurred

C. Cost is amortized over period expected to be benefitted.
   1. Amortization is like straight-line depreciation
   2. Can never amortize over more than 40 years

D. If disposed of, the book value of the intangible asset is eliminated and any gain or loss is recorded

E. Common type of intangibles
   1. Patents
      a. Granted for inventions (exclusive right to manufacturing, sell, or control)
      b. Amortize over shorter of legal life or useful life
   2. Copyrights
      a. Covers artistic or published works
   3. Trademarks/Trade names
   4. Franchises
      a. Right to sell certain products or certain services, or to use certain trademarks or trade names normally within a designated area
   5. Leases
      a. Grant the right to use specific property for a period of time
      b. Leasehold improvements — amortize over shorter of the life of the lease or life of the improvement
   6. Goodwill
      a. Exists when a company has the ability to generate a superior rate of return on assets used in business
      b. Not recorded unless a business is purchased
      c. How measured?
         (1) Excess of amount paid for business over identifiable net asset
         (2) Remember assets in the balance sheet are at book value which is not necessarily the same as market value

F. Intangible assets are normally shown in the balance sheet separately in their own section.