# CEN 421 S20 Week 2 Lecture

These lecture notes are meant to be a complement to the textbook. It is essential that the student reads and understands the material in the textbook.

## Depreciation

Most of the equipment used in business has a useful life of several years. This is particularly true in the construction industry. Since this equipment will used for several years, it should be written off over the live of the equipment and not expensed in the year it was purchased. Because we want to minimize our income taxes, we would prefer to write off the total cost as quickly as possible. The IRS will not allow this, so they have developed depreciation schedules for both real and personal property.

The IRS has a rather complicated schedule for the depreciation of equipment called the modified accelerated cost recovery system (MACRS). This system is based on a 200% declining balance. It also uses the midmonth and mid year convention where it is always assumed that the equipment is placed into service at the middle of the month.

For tax purposes, you will want to depreciate the property as fast as possible. (remember the time value of money). For your own accounting purposes, you may want to use straight line depreciation over a longer period. You may also want to include a salvage value for when the equipment is eventually sold. The depreciation method used should try and match the expected loss in value of the equipment.

The value to be depreciated, or the initial cost, should include the purchase price plus any delivery, installation, and modification costs.
The book value or basis of the equipment will be the initial cost less the accumulated depreciation.

## Financial Ratios

Banks and other lenders are very concerned about the firms they loan money to. Actually, the owners and other stakeholders of these firms should be just a concerned as the lenders. It is just that the banks will require an audit and financial analysis before they will make the loan. One of the first things that the bank looks at is the financial ratios. The most common ration used by short-term lenders is the current ratio. This compares the firm's short-term assets with its short-term liabilities. Included in the short-term assets is the inventory. Since the inventory may not be worth as much as its book value, the quick ratio deducts inventory from the current assets. Banks will also be very concerned about the credit history and general reputation of the company and its principals. I cannot stress enough the importance of keeping a good credit history and a good reputation.

For longer term financing (mortgages and bonds), will also look at some additional long-term ratios. The total debt to equity shows how much of the firm is financed by the owner's own money and how much is borrowed. Lenders want the owners to have a substantial amount of their own money at risk.

### Collections

Most construction work is done on credit. Whether the job is for the state or a private party, the work is performed before it is paid for. In addition, there is usually an amount (10%) retained until the final inspection and approval. It is very important that the money be collected as soon as possible, If collections are slow, then the firm will have to borrow additional working capital to cover the shortfall.

### Payments

Most materials, supplies and subcontracts are paid after the material is delivered or the work performed. There are two thing that are very important to keep in mind here. While it is nice to using someone else's money (delaying your payments), your reputation is far more important. You do not want to be known as someone who drags out his payments. You need to be able to depend on your suppliers and subcontractors. The second thing to remember is to always take your trade discounts. This means that you must pay by the discount date.

### Industry Comparison

There are several more financial ratios as shown in the textbook. Your firm's ratios should be compared with the industry and your size firm to see where problems may exist. The ratios should also be compared with pasted years to see if the firm is improving or having problems.

### Cost Management

Cost management is critical to the success of any business. Because most construction jobs are fixed price, costs must be watched very closely and contained. The project manager should continuously compare actual costs with the budget/estimate. Any deviation should get immediate attention.

### Budgets

The estimating and budget process is very important. The project manager needs a realistic measurable budget to compare his actual costs with. I have always used the BAM theory of budgets and schedules. They must be believable, achievable, and measurable (BAM). Setting unrealistic budgets and schedules just does not work.

## Schedules

The schedule and the budget have to be aligned. Without this, it is hard to see how much money has been spent for a particular amount of work. I prefer the critical path method (CPM) of scheduling where each activity shows its duration and relationship/dependence with other activities. Try and assign an activity on the schedule for each budget item.

While the emphasis of this course is on accounting, the students should learn the fundamentals of scheduling. CPM will show potential bottlenecks so management can be prepared for potential delays.
When the budget is tied to the schedule, managers have much better control over the project.

## Final Audit

After the project is completed and all of the bills are paid, it is important to do a final audit. This audit compares actual costs with the budget. It is important to what went wrong and what went right. This information will be very useful in bidding future projects.

## Labor Burden

Besides the direct labor costs, the contractor must also pay mandated and optional fringe benefits to his employees.

Social security, Medicare, unemployment insurance and worker's compensation insurance are mandated. Life and health insurance and retirement benefits are provide as negotiated by labor union agreements or offered by the employer to attract and retain his employees.

Costs like social security are fixed by law. Other costs, like worker's compensation insurance are directly related to the firm's safety record. It is important from both an economic and humanitarian standpoint to have a safe workplace. Construction is a dangerous business and a good safety record can make a big difference in the profitability of the job. A good safety record will reduce the worker's compensation premiums on future jobs and will improve worker's moral.

## General Overhead

Whenever possible, costs should be allocated to a particular job.  Some costs, however, like the office manager, secretary, estimator, and general manager really fall into the category of general overhead.  As well as these people, other costs like main office and yard, the telephones, the general manager's car, advertising, licenses, and legal and accounting costs cannot be allocated to particular job and are charged to general overhead.

Overhead should be budgeted like any other cost.  The general manager is responsible for any cost overruns in overhead.  In order to control these costs, he must constantly monitor his actual costs and compare them with the budget. Historical cost records are probably the best way to estimate and budget overhead costs.  Obviously, these costs will need to be adjusted for inflation and expected growth.