

Construction Cost Estimating Course Proposal

Why a construction cost estimating course?

Construction cost estimating is an essential part of the construction process. Construction cost estimators are needed to prepare cost estimates throughout the life cycle at different phases of the project. These estimates include order of magnitude estimates, budget estimates, progress estimates, bid estimates, and change order estimates. The technique changes depending on the phase of the project. Obviously a solid foundation in methods of estimating is essential to those that wish to become construction cost estimators. A bachelor's degree is the typical entry level education level for entry level positions. In addition to those wishing to become construction cost estimators. Estimating is an important skill for those students wishing to become architects, engineers, construction managers or building owner's representatives.

What will the construction cost estimate course cover?

- The role of the estimator in the project team
- A review of algebra (solving for x, inverse, exponents, and word problems), and simple geometry and how these topics relate to construction cost estimating
- Digital spreadsheets functions relating to construction cost estimating.
- Cost databases
- Blueprint reading relating to estimating
- Quantification of materials and tasks from plans
- Construction Work Breakdown Systems
- Components of a bid package
- Different types and methods of estimating and when to employ them
- Determining material costs
- Calculating wage rates including taxes, benefits, worker's compensation
- Determining labor productivity
- Determining crew rates
- Determining equipment productivity
- Estimating project overhead
- Estimating contractor's overhead
- Determining allowances and contingencies
- Determining profit

What reference materials will be used for the course?

- Walker's Building Estimator's Reference Book, available in print and digital formats. This book is an integral part of the course, and will also be helpful for the student to use as a reference source after the class is finished.

At the end of the class students should be able to:

- Explain the role of the estimator in the project team
- Solve a series of estimating related math problems where the student needs to solve for x?use inverses, exponents, convert words to formulas, and require a basic knowledge of geometry
- Produce a digital spreadsheet template that containing all necessary formulas that can be used as an estimate form
- Produce a spreadsheet that can be used to solve an ad hoc estimating problem
- Summarize what cost databases are and identify where they can be found
- Draw a simple building plan, elevation, section, detail and door schedule
- Determine quantities of materials from a set of building plans
- Differentiate when and how to use different estimating methods
- Locate building products and organize estimating line items using the CSI MasterFormat and Unifomat work breakdown structures
- Calculate material, labor, and equipment costs to line items of an estimate
- Calculate overhead, and profit