

**J. Sargeant Reynolds Community College  
Course Content Summary**

**Course Prefix and Number:** BLD 231

**Credits:** 3

**Course Title:** Construction Estimating I

**Course Description:** Focuses on materials take-off and computing quantities from working drawings and specifications. Includes methods for computing quantities of concrete, steel, masonry, roofing, excavation. Deals with pricing building components, materials, and processes, as well as transportation and handling costs, markup discount procedures, equipment costs, and labor rates. Prerequisites: ARC 131 and ARC 132 or instructor's approval. Lecture 3 hours per week.

**General Course Purpose:** Course serves to educate the student in the economics of building construction in terms of the cost of materials and services, as well as an understanding of the potential impact on a construction project by local financial factors. Includes the five categories on project costs and explains the concept of project markups. Utilizes professional estimating software in quantity take-off and estimate bid sheet summaries. Course required for the Contemporary Technology for Design and Building Construction Management specialization of the Architectural and Engineering Technology AAS degree.

**Course Prerequisites and Co-requisites:**

Prerequisites: ARC 131 and ARC 132 or instructor's approval

**Student Learning Outcomes:**

Upon completing the course, the student will be able to

- a. Read blueprints efficiently to take off quantities for the trades list in Major Topics below;
- b. Construct formulas for spreadsheet estimating software and insert them in the trade "items" including waste percentages and conversions of units from take-off quantities to purchase quantities (ex., CF to CY);
- c. Apply knowledge gained to estimate a residential construction project through quantity take-off and using Means (software database costs) to develop estimates; and
- d. Utilize a computer-aided-estimating application to generate a cost take-off of a typical residential project including database management and the final estimate summary sheet including "add-ons".

**Major Topics to Be Included:**

- a. Site work
- b. Excavation
- c. Foundation
- d. Subfloor
- e. Superstructure
- f. Roof
- g. Through finish construction

**Date Created/Updated (Month, Day, and Year):** January 21, 2019