

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

ACADEMIC AFFAIRS

Course Number: CIVL 220 Department: Civil Engineering Technology

Course Title: Construction Estimating Semester: Spring Year: 1997

Objectives/Competencies

Course Objective	Competencies
<ol style="list-style-type: none">1. The student should develop an understanding of types of construction contracts and bidding methods and procedures.2. How to develop a Quantity Take-Off of materials required for the development of a construction cost estimate.3. Basic equipment and methods used for estimating site work: site clearing, excavation and grading.	<ol style="list-style-type: none">1. Know the difference between negotiated and competitive bids and the bidding process.2. Types of bonds and insurance required for construction contracts. <ol style="list-style-type: none">1. The importance of an accurate quantity take off of materials required for construction.2. Units of measure used for different types of construction materials and how to calculate them.3. Basic mathematics required for the various units of measure for materials. <ol style="list-style-type: none">1. Know the types of equipment used in site clearing and units of measure for quantity take-off: each, square yards, or acres.2. Types of equipment used and units of measure for quantity take-off used for site excavation; square yards, cubic yards.

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<p>4. Basic methods of estimating road and highway construction.</p> <p>5. Basic construction and estimating of reinforced and non-reinforced concrete walls and foundation.</p> <p>6. Basic construction methods and materials used in masonry construction.</p> <p>7. Basic methods of estimating quantities of materials for rough and finished carpentry in frame construction.</p>	<p>3. Methods of estimating grading plans using the borrow pit method or the average end method.</p> <p>1. Know the types of equipment and units of measure used for quantity take-off used for roadway excavation.</p> <p>2. Types of equipment and units of measure for quantity take-off of materials and site preparation of grading, compacting, placing of road base.</p> <p>3. Types of equipment and units of measure for quantity take-off of materials curb and paving of various types; Gravel, bituminous concrete, concrete.</p> <p>1. Be able to complete a quantity take-off of concrete, concrete form work and reinforcing steel, and concrete finishing.</p> <p>1. Be able to complete a quantity take-off of materials for concrete block construction including block, mortar, lintels, reinforcing, sash and corner block.</p> <p>2. Identify the types of brick and brick patterns affecting the Quantity take-off of various brick masonry.</p> <p>1. Be able to complete a quantity take-off of materials used for frame construction; sizes and number of pieces of studs, sills, joists rafters and headers.</p> <p>2. Know how to determine the required exterior and interior sheathing quantities.</p> <p>3. Be able to complete a quantity take-off of siding, roofing,</p>

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<p>8. Preparation of a complete cost estimate from building construction blueprints.</p>	<p>fascia, soffit and miscellaneous trim.</p> <ol style="list-style-type: none"> 1. Develop an ability to read and interpret a variety of types of construction drawings and blueprints to prepare quantity take-off and cost estimate. 2. Be able to prepare work sheets and cost estimate for basic residential construction.