

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
CMGT 322 – Commercial Estimating 1**

Created by: J. Reilly

Updated by:

Canino School of Engineering Technology

Department: Civil and Construction Technology

Semester/Year: Fall 2020

A. **TITLE:** Commercial Estimating 1

B. **COURSE NUMBER:** CMGT 322

C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 3

Lecture Hours: 1 per week

Lab Hours: 4 per week

Other: per week

Course Length: 15 Weeks

D. **WRITING INTENSIVE COURSE:** Yes No

E. **GER CATEGORY:** None: Yes: GER
If course satisfies more than one: GER

F. **SEMESTER(S) OFFERED:** Fall Spring Fall & Spring

G. **COURSE DESCRIPTION:**

In this course students will be introduced to estimating the costs of construction with a focus primarily on quantity take-off from construction plans. Student are also introduced to unit pricing of labor and material, assemblies and square foot estimates, and computer-assisted estimating.

H. **PRE-REQUISITES:** None Yes If yes, list below:

Have earned 45 credits, or permission of instructor

CO-REQUISITES: None Yes If yes, list below:

I. STUDENT LEARNING OUTCOMES: (see key below)

By the end of this course, the student will be able to:

| <u>Course Student Learning Outcome</u> <u>[SLO]</u> | <u>Program Student Learning Outcome</u> <u>[PSLO]</u> | <u>GER</u> <i>[If Applicable]</i> | <u>ISLO & SUBSETS</u> | |
|---|--|--------------------------------------|--|--|
| 1. Accurately “take-off” material quantities from a construction plan. | SO 8 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets Subsets |
| 2. Estimate labor hours required for construction work based on productivity and take off quantities. | SO 8 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets Subsets |
| 3. Acquire unit prices from vendors or published data catalogues or electronic data bases | SO 8 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets Subsets |
| 4. Perform an estimate “extension”. | SO 8 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets Subsets |
| 5. Perform a square and/or assemblies estimate | SO 6 and 8 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets Subsets |

| KEY | <u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u> |
|---------------|---|
| ISLO # | ISLO & Subsets |
| 1 | Communication Skills Oral [O], Written [W] |
| 2 | Critical Thinking <i>Critical Analysis [CA], Inquiry & Analysis [IA], Problem Solving [PS]</i> |
| 3 | Foundational Skills <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i> |
| 4 | Social Responsibility <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i> |
| 5 | Industry, Professional, Discipline Specific Knowledge and Skills |

*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes No

If YES, select one or more of the following categories:

- Classroom/Lab
- Internship
- Clinical Placement
- Practicum
- Service Learning
- Community Service

- Civic Engagement
- Creative Works/Senior Project
- Research
- Entrepreneurship
(program, class, project)

K. TEXTS: (SUGGESTED)

Construction Estimating 2nd Edition by Leonard P. Toenjes ISBN-13: 978-0826905451
ISBN-10: 0826905455

Estimating in Building Construction, 8th edition Steven J Peterson, PE, ISBN:013343110X, ISBN-13:9780133431100

L. REFERENCES:

RS Means Cost Data, Student edition, Wiley, 2012

Peterson, S.J., Construction Estimating using Excel, 2nd Edition, Pearson-Prentice Hall, 2012.

M. EQUIPMENT: None Needed:

N. GRADING METHOD: A-F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Exams

Quizzes

Projects

Homework

P. DETAILED COURSE OUTLINE:

I. Introduction to Estimating

i. the Bid Process

II. CSI Format

III. Estimating Quantities (Take-off)

i. General

ii. Sitework

1. Materials

2. Equipment

3. Labor

iii. Concrete and Formwork

1. Materials

2. Equipment

3. Labor

iv. Masonry

1. Materials

2. Equipment

3. Labor

v. Metals and Structural Steel

1. Materials

2. Equipment

3. Labor

- vi. **Rough and Finished Carpentry**
 - 1. **Materials**
 - 2. **Equipment**
 - 3. **Labor**
- IV. **Pricing the Estimate**
 - i. **Basic Principles**
 - ii. **Obtaining Unit Prices**
- V. **Closing the Bid.**
- VI. **Computer Estimating.**

Q. **LABORATORY OUTLINE:** None Yes

The lab outline will follow the topical outline. During the lab, students will perform estimating activities, ie; do “take-offs” from construction drawings and extensions (either manually or using computer software) to agree with the material being covered in the lecture.