

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



MASTER SYLLABUS

**COURSE NUMBER – COURSE NAME
CMGT 406 – Value Engineering**

Created by: Adrienne Rygel

Updated by:

Canino School of Engineering Technology

Department: Civil and Construction Technology

Semester/Year: Fall 2020

- A. **TITLE:** Value Engineering
- B. **COURSE NUMBER:** CMGT 406
- C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 3
Lecture Hours: 3 per week
Lab Hours: 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:**

This course introduces students to value engineering (VE). Students learn the VE methodology, its role in the decision-making process, and application on construction projects. Students use VE tools in project-based decision making. Students also learn how to analyze projects and lower costs using the VE method.

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

CMGT 300 Construction Management or ENGS 101 Intro to Engineering; and CMGT 322 Commercial Estimating I or CONS 222 Construction Estimating, or permission of the 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> <u>[If Applicable]</u> | <u>ISLO & SUBSETS</u> | |
|---|--|--------------------------------------|--|--|
| 1. Demonstrate understanding of VE concepts. | SO 5 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets |
| 2. Apply VE method to construction projects. | SO 2 and 5 | | 2-Crit Think ISLO ISLO | PS Subsets Subsets Subsets |
| 3. Demonstrate understanding of appropriate time to apply VE method for building design projects. | SO 5 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets |
| 4. Perform "function analysis" for buildings and civil projects. | SO 5, 6, and 8 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets |
| | SO 5 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets Subsets |
| | SO 5 | | 5-Ind, Prof, Disc, Know Skills ISLO ISLO | Subsets Subsets Subsets Subsets |
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| 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:

Dell'Isola, Alphonse (1997). "Value Engineering: Practical Applications." RSMears, ISBN 13-978-0876294635, 464p.

L. REFERENCES:

Kassa, Abate O. (2015) "Value Analysis and Engineering Reengineered." CRC Press. 192 p. ISBN-13:978-1498737258.

M. EQUIPMENT: None Needed:

N. GRADING METHOD: A-F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Exams

Homework

Quizzes

P. DETAILED COURSE OUTLINE:

I. VE Overview

A. VE defined

B. VE history

C. VE terminology

II. VE Benefits

III. Applications of VE

IV. VE method

A. Orientation Phase

B. Information Phase

C. Function Analysis Phase

D. Creative Phase

E. Evaluation Phase

F. Development Phase

G. Presentation Phase

H. Implementation Phase

V. Establishing a VE Program

Q. LABORATORY OUTLINE: None Yes