## 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. <u>TITLE</u>: Value Engineering

### B. <u>COURSE NUMBER</u>: CMGT 406

## C. <u>CREDIT HOURS</u>: (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.** <u>WRITING INTENSIVE COURSE</u>: Yes  $\square$  No  $\boxtimes$ 

E. <u>GER CATEGORY</u>: None: Yes: GER *If course satisfies more than one*: GER

F. <u>SEMESTER(S) OFFERED</u>: Fall Spring Fall & Spring

## G. <u>COURSE DESCRIPTION</u>:

This course intruduces students to value engineering (VE). Students learn the VE methodolgy, its role in the decision-making process, and application on contruction 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. <u>**PRE-REQUISITES</u>**: None $\Box$ Yes $\boxtimes$ If yes, list below:</u>

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

<u>CO-REQUISITES</u>: None Yes If yes, list below:

# I. <u>STUDENT LEARNING OUTCOMES</u>: (see key below)

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

| Course Student Learning Outcome   | Program Student                             | GED                              | ISLO & SUBSETS                                 |  |
|---|---|----------------------------------|--|--|
| [ <u>SLO]</u>   | <u>Learning</u><br><u>Outcome</u><br>[PSLO] | <u>GER</u><br>[If<br>Applicable] |  |  |
| 1. Demonstrate understanding of VE concepts.  | SO 5  |                                  |  | Subsets<br>Subsets<br>Subsets<br>Subsets |
| 2. Apply VE method to construction projects.  | SO 2 and 5                                  |                                  | 2-Crit Think<br>ISLO<br>ISLO                   | PS<br>Subsets<br>Subsets<br>Subsets      |
| 3. Demonstrate understanding of<br>appropriate time to apply VE method for<br>building design projects. | SO 5  |                                  | 5-Ind, Prof, Disc, Know Skills<br>ISLO<br>ISLO | Subsets<br>Subsets<br>Subsets<br>Subsets |
| 4. Perform "function analysis" for buildings and civil projects.  | SO 5, 6, and 8                              |                                  | 5-Ind, Prof, Disc, Know Skills<br>ISLO<br>ISLO | Subsets<br>Subsets<br>Subsets<br>Subsets |
|   | SO 5  |                                  | 5-Ind, Prof, Disc, Know Skills<br>ISLO<br>ISLO | Subsets<br>Subsets<br>Subsets<br>Subsets |
|   | SO 5  |                                  |  | Subsets<br>Subsets<br>Subsets<br>Subsets |
|   |   |                                  | ISLO<br>ISLO<br>ISLO                           | Subsets<br>Subsets<br>Subsets<br>Subsets |
|   |   |                                  | ISLO<br>ISLO                                   | Subsets<br>Subsets<br>Subsets<br>Subsets |
|   |   |                                  | ISLO<br>ISLO<br>ISLO                           | Subsets<br>Subsets<br>Subsets<br>Subsets |

|  | ISLO | Subsets |
|--|------|---------|
|  | ISLO | Subsets |
|  | ISLO | Subsets |
|  |      | Subsets |
|  |      |         |

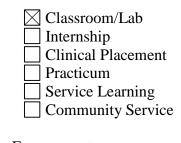
| KEY  | Institutional Student Learning Outcomes [ISLO 1 – 5]      |  |  |
|------|---|--|--|
| ISLO | ISLO & Subsets  |  |  |
| #    |   |  |  |
| 1    | Communication Skills                                      |  |  |
|      | Oral [O], Written [W]                                     |  |  |
| 2 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

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

#### APPLIED LEARNING COMPONENT: J.

Yes 🖂 No

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



Civic Engagement Creative Works/Senior Project

Research

Entrepreneurship

(program, class, project)

## K. <u>TEXTS</u>:

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

## L. <u>REFERENCES</u>:

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

- M. <u>EQUIPMENT</u>: None Needed:
- N. <u>GRADING METHOD</u>: A-F

## **O.** <u>SUGGESTED MEASUREMENT CRITERIA/METHODS</u>:

Exams Homework Quizzes

## P. <u>DETAILED COURSE OUTLINE</u>:

- 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. <u>LABORATORY OUTLINE</u>: None X Yes