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

MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
CMGT 301 - Scheduling and Planning

Created by: A. Reiter

Updated by:

Canino School of Engineering Technology

Department: Civil and Construction Technology

Semester/Year: Fall 2020

A.   <u>**TITLE**</u>: Scheduling and Planning

B.   <u>**COURSE NUMBER:**</u> CMGT 301

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

     # Credit Hours: 4
     # Lecture Hours: 2 **per week**
     # Lab Hours: 4 **per week**
       Other: **per week**

     Course Length: 15 **Weeks**

D.   <u>**WRITING INTENSIVE COURSE**</u>: Yes ☐   No ☒

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 focuses on the logical progression through a construction project. Students learn about precedence diagramming, activity duration times based on productivity analysis, resource allocation, and network schedules. Computer scheduling software is introduced and used during the weekly lab sessions to create, update and assign resources to projects. Students perform schedule compression and time - cost trade-off analysis to determine ways in which to accelerate and or cut project cost.

H.   <u>**PRE-REQUISITES:**</u> **None** ☐ **Yes** ☒ **If yes, list below:**

CMGT 300 Construction Management or ENGS 101 Intro to Enginering; and CMGT 322 Commercial Estimating 1 or CONS 222 Construction Estimating; or permission of the instructor

     <u>**CO-REQUISITES:**</u> **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:

Course Student Learning Outcome [SLO]	Program Student Learning Outcome [PSLO]	GER [If Applicable]	ISLO & SUBSETS	
1. Develop a logic network using precedence diagraming and arrow diagramming, and apply production rates to determine activity duration.	SO2 and 6		2-Crit Think ISLO ISLO	PS Subsets Subsets Subsets
2. Schedule projects in a computer based scheduling software.	SO 6		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
3. Format, plot, update, and share computer generated schedules.	SO 6		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
4. Demonstrate an understanding of the planning aspects of a project and the changes that can occur due to contract provisions (eg. schedule compression, resource leveling, schedule acceleration and cost).	SO 6		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
5. Demonstate an understanding and ability to allocate and level resources.	SO 5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
6. Manage risks inherent to construction projects, add time contingencies, and analyze qualitative and quantitative risks.	SO 5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets 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

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. <u>**TEXTS:**</u>

Construction Planning and Scheduling, 4th edition, Jimmie W. Hinze, Pearson, ISBN-13: 9780132473996

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

Step by Step with Microsoft Project

M. <u>**EQUIPMENT**</u>**: None** ☐ **Needed:** Computer lab with a plotter

N. <u>**GRADING METHOD:**</u> A-F

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

Exams
Homework
Quizzes

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

I. Developing a Network Model
II. Precedence Diagrams
III. Determining Activity Durations
IV. Time in Contract Provisions
V. Resource Allocation and Resource Leveling
VI. Money and Network Schedules
VII. Project Monitoring and Control
VIII. Computer Scheduling using MS Project and or Sage Contractor
IX. Earned Value: A Means for Integrating Costs and Schedule
X. The Impact of Scheduling Decisions on Productivity
XI. Short-Interval Schedules
XII. Linear Scheduling
XIII. PERT: Program Evaluation and Review Technique
XIV. Arrow Diagrams

Q. <u>**LABORATORY OUTLINE:**</u> **None** ☐ **Yes** ☒

1. Creating a task list
2. Setting up resources
3. Assigning resources to tasks
4. Formatting a schedule
5. Advanced scheduling
6. Fine tuning the schedule and organizing projects
7. Tracking progress and updating the schedule
8. Viewing and generating reports
9. Getting the project back on schedule
10. Sharing project information with other programs