MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
CMGT 300 - Construction Management

Created by: A. Reiter

Updated by:

Canino School of Engineering Technology

Department: Civil and Construction Technology

Semester/Year: Fall 2020
A. **TITLE**: Construction Management

B. **COURSE NUMBER**: CMGT 300

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**:
   Construction management fundamentals and their applications to the conduct of a construction business will be studied in this course. Topics include: estimating for the construction manager, CPM (critical path method) scheduling methods and expediting field operations, material management and jobsite laydown. Case studies are employed to assist students with understanding complex problems that arise during the management and administration of complex projects.

H. **PRE-REQUISITES**: None ☐ Yes ☒ If yes, list below:
   - 45 credits or more, 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:

<table>
<thead>
<tr>
<th>Course Student Learning Outcome [SLO]</th>
<th>Program Student Learning Outcome [PSLO]</th>
<th>GER [If Applicable]</th>
<th>ISLO &amp; SUBSETS</th>
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</thead>
<tbody>
<tr>
<td>1. Use appropriate new vocabulary in discussing fundamental features of a construction contract.</td>
<td>SO 7</td>
<td>5-Ind, Prof, Disc, Know Skills Subsets ISLO Subsets ISLO Subsets ISLO Subsets ISLO</td>
<td>Subsets</td>
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<td>2. Demonstrate an understanding of and discuss the different types of contracts along with their advantages and disadvantages.</td>
<td>SO 7</td>
<td>5-Ind, Prof, Disc, Know Skills Subsets ISLO Subsets ISLO Subsets ISLO Subsets ISLO</td>
<td>Subsets</td>
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<td>3. Demonstrate an understanding of the ethical issues and social implications associated with construction contracts and project delivery.</td>
<td>SO 4</td>
<td>4-Soc Respons Subsets ISLO Subsets ISLO Subsets ISLO Subsets ISLO</td>
<td>Subsets</td>
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<td>4. Use professional-related literature to report on current practice and techniques associated with civil engineering and construction projects.</td>
<td>SO 1</td>
<td>1-Comm Skills Subsets ISLO Subsets ISLO Subsets ISLO Subsets ISLO</td>
<td>W Subsets</td>
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<td>5. Create a CPM network diagram manually and determine ES, EF, LS, LF and total float.</td>
<td>SO 6</td>
<td>5-Ind, Prof, Disc, Know Skills Subsets ISLO Subsets ISLO Subsets ISLO Subsets ISLO</td>
<td>Subsets</td>
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<td>6. Utilize software application (eg., MS Project, Primavera, Suretrack) to produce and display a construction project schedule.</td>
<td>SO 6</td>
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<td>7. Explore public vs. private work and the integral differences between the two sectors: required documentation differences, cost differences, safety protocols, and project funding.</td>
<td>SO 7</td>
<td>5-Ind, Prof, Disc, Know Skills Subsets ISLO Subsets ISLO Subsets ISLO Subsets ISLO</td>
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<td>8. Choose appropriate equipment based on jobsite conditions, productivity factors, and published equipment performance ratings</td>
<td>SO 5</td>
<td>5-Ind, Prof, Disc, Know Skills Subsets ISLO Subsets ISLO Subsets ISLO Subsets ISLO</td>
<td>Subsets</td>
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<td>KEY</td>
<td>Institutional Student Learning Outcomes [ISLO 1 – 5]</td>
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<td>1</td>
<td>Communication Skills</td>
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<td>Oral [O], Written [W]</td>
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<td>2</td>
<td>Critical Thinking</td>
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<td>Critical Analysis [CA], Inquiry &amp; Analysis [IA], Problem Solving [PS]</td>
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<td>Foundational Skills</td>
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<td>Information Management [IM], Quantitative Lit./Reasoning [QTR]</td>
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<td>Social Responsibility</td>
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<td>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</td>
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<td>5</td>
<td>Industry, Professional, Discipline Specific Knowledge and Skills</td>
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*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:**


L. **REFERENCES:**

Engineering News Record (ENR)-available in NS117, on-line and in the library.
Civil Engineering journal (available in the surveying lab and library)

M. **EQUIPMENT:** None ☒ Needed:

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

- Exams
- Homework
- Quizzes

P. **DETAILED COURSE OUTLINE:**

I. Construction Management history
   - evolution of management through time
   - where we are today (popular methods of management)
   - labor and unions

II. Project delivery
    - Participants
    - contract types
    - delivery methods

III. Scheduling techniques
    - CPM
    - linear
    - logic networks
    - Gantt charts
IV. Construction contract administration
   - Essential contract documents
   - Contractual relationships
   - The bid and award
   - Insurance
   - Bonding

V. Accounting, record keeping
   - Income statement
   - Balance sheet
   - Status reports

VI. Equipment selection and cost
   - Ownership cost vs. renting and leasing
   - Choosing and sizing equipment for the project
     - Cranes
     - Loaders
     - Trucks and hauling equipment

VII. Quality, productivity and safety
   - Quality assurance
   - Owner and jobsite effects on productivity

Q. **Laboratory Outline:** None ☒ Yes ☐