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

MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
CMGT 305 – Heavy Construction

Created by: Adrienne Rygel
Updated by:

Canino School of Engineering Technology

Department: Civil and Construction Technology

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

B. **COURSE NUMBER:** CMGT 305

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

   - # Credit Hours: 3
   - # Lecture Hours: 3 per week
   - # Lab Hours: 3 per week
   - Other: 3 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 construction equipment operating characteristics, economics, and production rate estimation. Heavy construction methods and procedures associated with excavation, hauling equipment, aggregate production, and mass earthwork operations are reviewed.

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

   ENGS 101 Intro to Engineering or CMGT 100 Intro to Construction Management or CMGT 300 Construction Management, 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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<tbody>
<tr>
<td>1. Demonstrate an understanding of construction equipment operating characteristics.</td>
<td>SO 5</td>
<td>5-Ind, Prof, Disc, Know Skills ISLO ISLO</td>
<td>Subsets Subsets Subsets Subsets</td>
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<tr>
<td>2. Demonstrate an understanding of the economics of heavy construction projects.</td>
<td>SO 8</td>
<td>5-Ind, Prof, Disc, Know Skills ISLO ISLO</td>
<td>Subsets Subsets Subsets Subsets</td>
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<td>3. Perform production rate estimation related to heavy construction projects.</td>
<td>SO 8</td>
<td>5-Ind, Prof, Disc, Know Skills ISLO ISLO</td>
<td>Subsets Subsets Subsets Subsets</td>
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<td>4. Discuss heavy construction methods and procedures associated with excavation and mass earthwork operations.</td>
<td>SO 6</td>
<td>5-Ind, Prof, Disc, Know Skills ISLO ISLO</td>
<td>Subsets Subsets Subsets Subsets</td>
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<tr>
<td>5. Discuss heavy construction methods and procedures associated with aggregate production.</td>
<td>SO 5</td>
<td>5-Ind, Prof, Disc, Know Skills ISLO ISLO</td>
<td>Subsets Subsets Subsets Subsets</td>
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<td>6. Discuss heavy construction methods and procedures associated with hauling equipment.</td>
<td>SO 5</td>
<td>5-Ind, Prof, Disc, Know Skills ISLO ISLO</td>
<td>Subsets Subsets Subsets Subsets</td>
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**KEY**

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


M. **EQUIPMENT:** None ☒ Needed:

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

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

Exams
Homework
Quizzes

P. **DETAILED COURSE OUTLINE:**

I. Overview of heavy construction projects
II. Heavy construction equipment operating characteristics
III. Management practice for heavy construction projects
   A. Oversight
   B. Planning and scheduling
   C. Economics
   D. Production rate estimation.
IV. Heavy construction methods and procedures
   A. Excavation,
   B. Hauling equipment,
   C. Aggregate production,
   D. Mass earthwork operations

Q. **LABORATORY OUTLINE:** None ☒ Yes ☐