

**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: 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 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:

<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 an understanding of construction equipment operating characteristics.	SO 5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
2. Demonstrate an understanding of the economics of heavy construction projects.	SO 8		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
3. Perform production rate estimation related to heavy construction projects.	SO 8		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
4. Discuss heavy construction methods and procedures associated with excavation and mass earthwork operations.	SO 6		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
5. Discuss heavy construction methods and procedures associated with aggregate production.	SO 5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
6. Discuss heavy construction methods and procedures associated with hauling equipment.	SO 5		5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets

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:

Ringwald, Richard (1993). "Means Heavy Construction Handbook." RS Means. 448 p. ISBN 13-978-0876292839.

L. REFERENCES:

"Heavy Construction Costs With RSMeans data 2019" RS Means, 33rd edition. 740 p. ISBN 13-978-1946872593.

Gould, Frederick and Joyce, Nancy (2013). "Construction Project Management." 4th edition. Pearson. ISBN 13 - 9780132877244.

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