DATE OF LAST REVIEW: 2/15/2013
CIP CODE: 15.1302
SEMESTER: Departmental Syllabus
COURSE TITLE: Construction Management
COURSE NUMBER: ENGR-0107
CREDIT HOURS: 4
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: 913-334-1100
EMAIL: KCKCC-issued email accounts are the official means for electronically communicating with our students.
PREREQUISITE(S): None
REQUIRED TEXT: Please check with the KCKCC bookstore, http://www.kckccbookstore.com for the required text for your particular class.

COURSE DESCRIPTION: This course will provide the student with an overview of the construction process from excavation to final landscaping. Instruction will include calculating the cost of earthmoving, concrete preparation and finishing, and wood frame construction. Students will plan and schedule a construction project using the linear scheduling method, the bar chart method, and the critical path method.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE: Course content may vary, but will generally include the following:

I. The Construction Process
   A. Project Development and Contract Procedures
   B. Codes and Regulations
   C. Safety and Health

II. Introduction to Earthmoving
   A. The Earthmoving Process
   B. Earth Moving Equipment
   C. Estimating Earthmoving Cost and Volume
D. Soil and rock
   1. General Soil Characteristics
   2. Soil Classification Systems
   3. Field Identification Methods

III. Excavating and Lifting
   A. Excavating Equipment
   B. Hydraulic Excavating
   C. Drag line Excavating
   D. Clamshell Excavating
   E. Trench Excavating
   F. Estimating Excavating Time and Cost

IV. Loading and Hauling
   A. Loading Equipment
   B. Hauling Equipment
   C. Estimating Loading and Hauling Time and Cost

V. Compacting and Finishing
   A. Field Density Measurement Methods
   B. Estimating Compacting Time and Cost
   C. Finishing Equipment and Methods
   D. Estimating Finishing Time and Cost

VI. Concrete Construction Practices
   A. Placing and Consolidating Concrete
   B. Finishing and Curing
   C. Hot and Cold Weather Practices
   D. Formwork requirements
   E. Estimating Concrete Wall and Slab Loads
   F. Estimating Concrete Volume (Cubic Yards)
   G. Estimating Concrete Lateral Loads

VII. Wood Construction
   A. Wood Materials and Properties
   B. Glued Laminated Timber
   C. Engineered Lumber
   D. Plywood
   E. Frame Construction
      1. Platform Construction
      2. Balloon Frame Construction
      3. Foundation and Floor Construction
   F. Estimating Time and Cost of Wood Construction

VIII. Steel Construction
   A. Structural Steel Types
   B. Structural Steel Shapes
   C. Erecting Structural Steel
   D. Structural Steel Connections

IX. Planning and Scheduling Construction Projects
   A. Bar Chart Schedules
   B. Critical Path Schedules
   C. Linear Schedules
EXPECTED LEARNER OUTCOMES:

A. Upon completion of the course the student will be able to demonstrate knowledge of the construction process.
B. Upon completion of the course the student will be able to demonstrate knowledge of the earthmoving process as it relates to construction.
C. Upon completion of the course the student will be able to demonstrate knowledge of excavating and lifting as it relates to construction.
D. Upon completion of the course the student will be able to demonstrate knowledge of loading and hauling as it relates to construction.
E. Upon completion of the course the student will be able to demonstrate knowledge of compacting and finishing as it relates to construction.
F. Upon completion of the course the student will be able to demonstrate knowledge of concrete construction practices.
G. Upon completion of the course the student will be able to demonstrate knowledge of wood construction methods and practices.
H. Upon completion of the course the student will be able to demonstrate knowledge of steel construction methods and practices.
I. Upon completion of the course the student will be able to demonstrate knowledge of planning and scheduling construction projects.

COURSE COMPETENCIES:

Upon completion of the course the student will be able to demonstrate knowledge of the construction process.
1. Upon completion of the course the student will be able to demonstrate knowledge of project development and contract procedures.
2. Upon completion of the course the student will be able to identify and demonstrate the ability to apply building code regulations as related to construction projects.
3. Upon completion of the course the student will be able to identify and demonstrate the ability to apply health and safety codes as related to construction projects.

Upon completion of the course the student will be able to demonstrate knowledge of the earthmoving process as it relates to construction.
1. Upon completion of the course the student will be able to define the earthmoving process.
2. Upon completion of the course the student will be able to identify earthmoving equipment and state its’ individual purpose.
3. Upon completion of the course the student will be able to estimate and calculate the cost of an earthmoving operation.
4. Upon completion of the course the student will be able to identify soil and rock by their individual characteristics.
5. Upon completion of the course the student will be able to differentiate between clay and sandy loam soils.
6. Upon completion of the course the student will be able to identify soil by utilizing field Soil identification methods.
7. Upon completion of the course the student will be able to identify and utilize a soil classification system.

Upon completion of the course the student will be able to demonstrate knowledge of excavating and lifting as it relates to construction.
8. Upon completion of the course the student will be able to identify excavating equipment.
9. Upon completion of the course the student will be able to define the hydraulic excavating process.
10. Upon completion of the course the student will be able to define the drag line excavating process.
11. Upon completion of the course the student will be able to define the clamshell excavating process.
12. Upon completion of the course the student will be able to define the trench excavating process.
13. Upon completion of the course the student will be able to interpret data and estimate the time and cost of an excavation operation.

**Upon completion of the course the student will be able to demonstrate knowledge of loading and hauling as it relates to construction.**
14. Upon completion of the course the student will be able to identify loading equipment.
15. Upon completion of the course the student will be able to identify hauling equipment.
16. Upon completion of the course the student will be able to interpret data and estimate the time and cost of a loading and hauling operation.

**Upon completion of the course the student will be able to demonstrate knowledge of compacting and finishing as it relates to construction.**
17. Upon completion of the course the student will be able to identify and utilize field density measurement methods as related to compacting and finishing.
18. Upon completion of the course the student will be able to interpret data and estimate the time and cost of a compacting operation.
19. Upon completion of the course the student will be able to identify and define finishing equipment and finish methods as related to excavating.
20. Upon completion of the course the student will be able to interpret data and estimate the time and cost of a finishing operation.

**Upon completion of the course the student will be able to demonstrate knowledge of concrete construction practices.**
21. Upon completion of the course the student will be able to differentiate between placing and consolidating concrete.
22. Upon completion of the course the student will be able to define the finishing and curing process as it relates to concrete.
23. Upon completion of the course the student will be able to differentiate between hot and cold weather practices as related to concrete.
24. Upon completion of the course the student will be able to identify formwork requirements as related to concrete.
25. Upon completion of the course the student will be able to interpret data and estimate concrete wall and slab loads.
26. Upon completion of the course the student will be able to interpret data and estimate concrete volume.
27. Upon completion of the course the student will be able to interpret data and estimate concrete lateral loads.

**Upon completion of the course the student will be able to demonstrate knowledge of wood construction methods and practices.**
28. Upon completion of the course the student will be able to identify wood materials and their properties used in wood construction.
29. Upon completion of the course the student will be able to identify and differentiate between Platform, balloon, and slab construction methods.
33. Upon completion of the course the student will be able to interpret data and estimate the cost of a wood construction project.

**Upon completion of the course the student will be able to demonstrate knowledge of steel construction methods and practices.**
34. Upon completion of the course the student will be able to identify and differentiate between Structural steel types and shapes.
35. Upon completion of the course the student will be able to interpret structural steel erection data.
36. Upon completion of the course the student will be able to interpret structural steel connection data.

**Upon completion of the course the student will be able to demonstrate knowledge of planning and scheduling construction projects.**
37. Upon completion of the course the student will be able to interpret and develop a bar chart
38. Upon completion of the course the student will be able to interpret and develop a critical path construction project schedule.
39. Upon completion of the course the student will be able to interpret and develop a linear construction project schedule.

ASSESSMENT OF LEARNER OUTCOMES:
Assessment methods may include, but are not limited to, the following: Homework, Assignments, Quizzes, Class Participation, Chapter Tests, and Final Exam. The grading scale and the process for calculating the course grades are to be determined by the individual instructors. This information will be included in each instructor’s syllabus.

SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center, in Rm. 3354 or call at: 288-7670.