STANDARDIZED COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER: CTC 229
COURSE TITLE: Construction Estimating
COURSE CATALOG DESCRIPTION:
The course is focused on reviewing construction costs in more detail for the purpose of construction estimating and bidding. Estimation of cost calculations will include pricing labor, material and equipment costs in the areas of site work, concrete, masonry, steel, carpentry, roofing, finishes, mechanical and electrical systems.

LECTURE HOURS: 2, LAB HOURS: 2
CREDIT HOURS: 3

PREREQUISITES: ENG 101, MAT 137, CTC 140- Construction Graphics Quantity/Takeoff and ARC 221
CO-REQUISITE: none

SECTION II

A. SCOPE:
This course covers the following topical areas; introduction and overview, labor and materials, the process, Means costs data review, scheduling introduction, including the following Construction Document Specification Divisions (Div): Div. 2 Site work, , Div. 3 Concrete, Div. 4 Masonry, estimating with Excel, Div. 5 Metals, Div. 6 Carpentry, Div. 7 Thermal and Moisture Protection, Div. 8 Doors and Windows, Div. 9 Finishes, Div. 10 Specialties, Div. 11 Equipment, Div. 12 Furnishings, Div. 13 Special Construction, Div. 14 Conveying, Div. 15 Mechanical, Div. 16 Electrical, and project presentations.

This course fulfills Embedded Core Competencies in the areas of Quantitative Reasoning (QR) and Continuing Learning (CL)

B. REQUIRED WORK:
Work varies by instructor. Students will be expected to do all required readings, assignments, tests, quizzes, and homework as outlined by the instructor.

C. ATTENDANCE AND PARTICIPATION:
Regular attendance, assignment submissions, timeliness, promptness and class participation are expected. Instructors will include specific attendance and participation policies required in their class syllabi.

D. METHODS OF INSTRUCTION
Methods of instruction include any of the following: lecture, labs, demonstrations, group discussions, student presentations, student reports, field-trips and use of classroom audiovisual and computer –based presentation materials.

E. OBJECTIVES, OUTCOMES AND ASSESSMENTS

LEARNING OBJECTIVES	LEARNING OUTCOMES	ASSESSMENT METHODS
To demonstrate an understanding of:	**Student will:**	**As measured by:**
Estimate sheets and summary estimate sheet	Create detailed numeric estimate sheets and summary estimate sheet.	Homework, exams, and class project
Quantity takeoff pricing from historical database	Interpret and calculate pricing from historical database (QR 3)	Homework, exams, and class project
Cost of equipment for small quantities versus large quantities	Interpret and calculate costing of equipment for small quantities versus large quantities and convert to graph(QR 2,3)	Homework, exams, and class project
Crew size productivity	Convert crew size productivity to duration days of work performed	Homework, exams, and class project
CSI division format estimates	Perform a complete estimate within the guidelines of CSI division format. Interpret and evaluate results for accuracy(QR 4)	Homework, exams, and class project
Estimating software	Use computer based estimating software to identify and evaluate information to complete an estimate for the project (CL 1,2)	Homework, exams, and class project

F. RECOMMENDED TEXT (S) AND MATERIALS:

"Estimating Construction Costs", 5th Ed., Peurifoy & Oberlender

"Building Construction Cost Data", 2010, (Means)

RECOMMENDED REFERENCE MATERIALS:

Means Estimating Handbook

LABORATORY MANUALS:

Instructor generated exercises

G. **INFORMATION TECHNOLOGY**-

Use of Microsoft Word, Power Point, and Excel.