METROPOLITAN STATE UNIVERSITY OF DENVER
Office of Academic and Student Affairs

REGULAR COURSE SYLLABUS

College of: Professional Studies

Department: Engineering and Engineering Technology

Prefix & Course Number: SSE 3500 Crosslisted With*: ______

Course Title: Humanitarian Engineering

Transcript course title (30 characters): HUMANITARIAN ENGINEERING

Check All That Apply:  Required for Major: ______ Required for Minor: ______ Specified Elective: ______

Required for Concentration: ______ Elective: X Service Course: ______

To receive Title IV financial aid funds, all institutions of higher education must comply with the federal definition of a credit hour. The Higher Learning Commission requires institutions to maintain policies and procedures for verifying compliance with this definition.

*Federal Credit Hour Definition: A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than:

(1) one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester or trimester hour of credit, or ten to twelve weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or (2) at least an equivalent amount of work as required in paragraph (1) of this definition for other activities as established by an institution, including laboratory work, internships, practica, studio work, and other academic work leading toward the award of credit hours. 34CFR 600.2 (11/1/2010)

Credit Hours: 3 (3 +0) Schedule Type: L Grade Mode: L

Face-to-Face or Equivalent Hours per course:
Lecture 45 Lab ______ Internship ______ Practicum ______ Other:
Additional Student Work Hours per course: 90

OR

Credit Hours: 3 (0+0+3) Schedule Type: G Grade Mode: L

Face-to-Face or Equivalent Hours per course:
Lecture Lab ______ Internship ______ Practicum ______ Other (field-based): 90
Additional Student Work Hours per course: 45

APPROVED: ____________________________ 10/12/2015

Department Chair OR Program Director

Date

_______________________________ 10/14/15

Dean OR Associate Dean

Date

_______________________________ 11/28/15

Associate VP, Academic and Student Affairs

Date

*If crosslisted, attach completed Course Crosslisting Agreement Form
Prefix and Course Number: SSE 3500

Variable topics umbrella course: No X Yes _____ If Yes, number of credit hours allowed _____

Specified repeatable course: No X Yes _____

Prerequisite(s): None

Corequisite(s):

Prerequisite(s) or Corequisite(s):

Banner Enforced:

Prerequisite(s):
Corequisite(s):
Prerequisite(s) or Corequisite(s):

Registration restrictions: Level _____ Class _____ Program/Major _____ Student attribute _____

Catalog Course Description:
In this course students will be introduced to Humanitarian Engineering through hands on instruction and project work in tandem with lectures. Students will design and implement a sustainable community project that helps an underrepresented community to meet the population’s basic engineering needs. This project will be based on knowledge of relevant community development methodologies that students will be introduced to through lecture. Students will learn to apply Appropriate Design concepts as well as development implementation strategy with respect to sustainability, and design for community. Students will compare and contrast engineering for developing community systems strategies with the traditional design process.

Required Reading and Other Materials will be equivalent to:
Munoz, D; Mitcham, C. (latest edition). Humanitarian Engineering: San Rafael, CA 94903,

Specific Measurable Student Behavioral Learning Objectives:
1. Distinguish and define the subject Humanitarian Engineering
2. Examine and compare sustainable technologies used in Humanitarian Engineering
3. Select appropriate project methods
4. Exhibit knowledge of Appropriate Technology concepts
5. Identify local sourced sustainable materials and associated technologies

Detailed Outline of Course Content:
I. The challenges of humanitarian engineering
II. Social and cultural aspects of humanitarian engineering projects
III. Investigating existing conditions in the community
IV. Methodology of conducting a community appraisal
V. Appropriate Technology concepts and selection
VI. Monitoring and evaluation practices
VII. Application of concepts to community project
VIII. Implementation of a project
IX. Assessment of Social and cultural implications of design on local community
Evaluation of Student Performance:
- Examinations
- Assignments
- Final Paper/Presentation

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