CET 250 Route Location and Design

Course Description: A course on highway design criteria and standards. Topics include: design and layout of horizontal curves, verticals, and spirals; superelevation use; typical sections; and boundary, area, and right-of-way determination. Students complete outdoor field exercises and computer lab exercises.

Prerequisites(s): CET 110 **Corequisite(s):** None

Lecture Hours: 3	Lab Hours: 2	Credit Hours: 4
Lab Fee: $70	Supplemental Fee: $0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lec/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	X Classroom
Semesters Offered: X Fall	□ Spring	X Summer

Course Primary Text:

Title: None	Edition:
Author(s):	
Publisher:	

Supplemental Materials:

Optional Book: Mastering Civil3D 2014 – Holland, Davenport and Chappell
Or AutoCAD Civil 3D Fundamentals

Course Outcomes:

1	ABET (a), Reinforced - an ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
2	ABET (b), Reinforced - an ability to apply the knowledge of mathematics, science, engineering, and technology to engineering problems that require limited application of principles but extensive practical knowledge.
3	ABET (e), Reinforced - an ability to identify, analyze, and solve narrowly defined engineering technology problems.
4	ABET (f), Reinforced - an ability to apply written, oral, and graphical communication in both technical and non-technical environments

Course Topics:

Week 1	Introduction – Highway design elements
Week 2	Circular curve elements, stationing
Week 3	Circular curve calculations, design and layout
Week 4	Compound and Reverse curves

Week 5	Computation of coordinates on circular curves, site distance issues
Week 6	Vertical curve elements
Week 7	Equal-tangent curve calculations, high/low point determination
Week 8	Unequal-tangent curve calculations
Week 9	Passing a vertical curve through a fixed point, site distance issues
Week 10	Spiral curve elements
Week 11	Spiral curve computations, design and layout
Week 12	Spiral curve computations, design and layout continued
Week 13	Typical sections
Week 14	Super-elevation
Week 15	Intersection and cul-de-sac design

Methods of Evaluation/Assessment

14	Labs	@ 15%
10	Quizzes	@ 10%
	Test 1	@ 25%
	Test 2	@ 25%
	Test 3	@ 25%

Course Keeper: James Decker, PS

Date Completed: 9/10/2013
Updated: March 15, 2019, Carol Morman