

CAD Department Course Outline

DRFT 2263 – Civil Engineering Fundamentals (F)

Catalog Description:

This course will introduce basic Civil Engineering Principles using AutoCAD Civil 3D in the preparation of AutoCAD drawings. Topics include AutoCAD Civil 3D essentials, GLO legal descriptions, US Geological Survey mapping and symbols, and boundary topographic surveys. Students will prepare plan and profile sheets for subdivision streets, sanitary sewers, and storm drainage systems. The students will be introduced to determining drainage basin boundaries and calculating storm sewer runoff volumes.

Prerequisites:

DRFT 1234, DRFT 2114

Credit hours/Contact Hours/Load hours:

3/3/3

Target Audience/Transferability:

This is a required course for the AAS CAD degree with the Civil/Landscape option and is non-transferable

Student Learning Outcomes:

Students will:

- Plot metes and bounds legal descriptions using basic trigonometry functions and coordinate geometry.
- Perform section break downs and plot legal descriptions within the correct Township and Range on USGS topographic maps.
- Calculate differential elevations from survey field notes.
- Identify drainage area boundaries from contour maps.
- Draw plan and profile sheets for streets, storm sewers and sanitary sewers.
- Design street alignments, standard street sections, and street corridors using AutoCAD Civil 3D.
- Calculate vertical curve data based on AASHTO design standards

Topics:

- Cad drawing management
- GLO survey system
- Boundary topographic surveys
- Basic math for Civil Engineers
- Residential subdivision design
- Introduction to flood plain management

Forms of Assessment:

- Completion of drawing assignments
- Tests/quizzes on commands and concepts
- Final Project submitted electronically and on paper

Rev. 7/2019