Course Prefix and Number: CIV 299

Course Title: Supervised Study in Civil Engineering: CAD for Hydraulics and Drainage Design

Course Description:
Assigns problems for independent study incorporating previous instruction and supervised by the instructor. Develops expertise in the use of computer-aided-design specifically in relation to the design of drainage and hydraulic systems as addressed in civil engineering projects.
Prerequisite(s): MTH 116. Lecture 2 hours per week. Laboratory 3 hours per week. Total 5 hours per week.

General Course Purpose:
This course will serve as an alternative to CIV 241, Applied Hydraulics and Drainage I, to meet a requirement for the Architectural and Civil Engineering Technology AAS, Civil Engineering Technology Specialization. This is a CAD-based course that will enable students to execute projects designed to develop their knowledge of principles and practices involving drainage and flow design in civil engineering.

Course Objectives:
Upon completing the course, the student will be able to:
1. Utilize CAD technology in civil engineering hydraulic/drainage design.
2. Modify site characteristics to accommodate drainage flow.
3. Perform quantity takeoff and volume calculations.
4. Create plan profile sheets.

Major Topics to be Included:
1. Analysis of topology and site contour
2. Surface 3D development
3. Pipe networks – configuration and layout
4. Pond grading
5. Determination of mass haul and material volumes

Effective Date of Course Content Summary: February 15, 2012