J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: CIV 299 **Credits:** 3

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: MTH 115. Lecture 2 hours. Laboratory 3 hours. Total 5 hours per week.

General Course Purpose: 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 Prerequisites and Co-requisites:
Prerequisite: MTH 115

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

Major Topics to Be Included:
a. Analysis of topology and site contour
b. Surface 3D development
c. Pipe networks – configuration and layout
d. Pond grading
e. Determination of mass haul and material volumes

Effective Date of Course Content Summary: February 15, 2012