

Course Outline
CADD 251
Computer-Aided Civil Applications
3 semester hours

The Community College of Baltimore County

Description

Computer-Aided Civil Applications

Introduces students to CAD civil engineering techniques and applications through the use of a customized package; includes subdivision design, grading, roads, parking lots, drainage, sewerage, water mains, erosion and sediment control, earthwork quantities (cut and fill), and cost estimation.

3 credits; 2 lecture hours and 3 laboratory hours per week. Prerequisites: CADD 101, SURV 101, SURV 121, and SURV 217. Two years experience in civil engineering may be substituted for SURV 101, SURV 121, and SURV 217. Offered spring semester only.

Overall Course Objectives

Upon completion of this course the student will be able to:

1. Create point, surface and line, and curve data.
2. Set lot creation defaults.
3. Calculate a grid, Earthworks volume, a Section volume, and a Composite volume.
4. Work with point, default, and contour data.
5. Calculate runoff and graphical peak discharge.
6. Use pond design tools to design a pond.
7. Draft, design, edit, analyze, and station a centerline.
8. Create a profile.
9. Design a cul-de-sac with transitions.
10. Create a 3D grid of a roadway.
11. Superelevate a roadway design.
12. Place and annotate ground cover and individual plantings.

Major Topics

1. Softdesk Project and Drafting Environment
2. Point Data
3. Line and Curve Data
4. Surface Data
5. Lots, Figures, and Parking
6. Site Volumes
7. Hydrology

8. Roadway Design Process
9. Roadway Volumes
10. Cul-de-sacs
11. Slope Control and Superelevation

Course Requirements

Grading/Exams: Grading procedures will be determined by the individual faculty member and will include the following:

1. Graded exercises
2. Periodic tests
3. Comprehensive final examination
4. Final project

Other Course Information

This course a core course in the CADD curricula.
This course is taught in a computerized environment.
There are 2 lecture and 3 laboratory hours per week.