

# Common Course Outline

## CADD 141

### Inventor

3 Credits

## The Community College of Baltimore County

### Description

**CADD 141 - Inventor** studies three-dimensional (3D) CAD techniques and applications with emphasis on increasing productivity in the creation and editing of 3D models using Inventor<sup>®</sup> software; includes wireframe sketching, surfacing, shading, 3D primitives of solids, plotting 3D models, generating solids, and routines that aid in 3D construction.

**3 Credits:** 2 lecture and 2 laboratory hours

**Prerequisites:** CADD 101 or permission of program coordinator.

### Overall Course Objectives

Upon completion of this course students will be able to:

1. create 2D sketches with geometric constraints;
2. create a 3D model using solids primitives;
3. view 3D models from different vantage points;
4. extrude 2D geometry.
5. revolve 2D geometry;
6. create 3D models from isometric and orthographic drawings;
7. create rendered images in a variety of visual styles or materials;
8. build solid models using Boolean operations;
9. create needed geometry in standard construction planes;
10. construct working drawings from a 3D model; and
11. export and print 3D models.

### Major Topics

- I. Orthographic and custom planar definitions
- II. Sketching using constraints and geometric constructions
- III. Extruding 2D sketches and use of draft angles
- IV. Revolved modeling
- V. Shelling models
- VI. Sweeping and lofting
- VII. Generating Working Drawings
- VIII. Rendering
- IX. Plotting

X. Solid Modeling and 3D printing

**Course Requirements**

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

**Grading/Exams:**

- Portfolio including a minimum of three graded exercises
- A minimum of three tests
- One comprehensive midterm and final examination (Two examinations)

Written Assignments: Students are required to use appropriate academic resources

**Other Course Information**

This course is a core course in the CADD curricula. This course is taught in a computerized environment.