

## Department:

Engineering Graphics and Technologies

## Course Description:

This course provides the student with an advanced understanding of computer drafting hardware/software and the use and application of each. The course provides an in-depth development of drawing, editing, and coordinate set-up.

## Course Competencies:

Upon completion of the course, the student should be able to:

1. Create an advanced drawing, setup, construct geometry, and control accuracy tools.
2. Create and edit complex 3D geometry, wireframe, and solid models.
3. Plot drawings on media using correct drafting standards and scale.
4. Produce drawings using a variety of EG Software, Parametric Modeling.
5. Create materials and textures to 3D and parametric models.
6. Produce multipart animations and/or simulations.
7. Understand project management and tracking.
8. Apply other media and software applications to advanced CAD/Parametric files.

## Course Content:

- A. Create Parametric Drawings
  1. Create new drawing
  2. Perform drawing set up
  3. Construct geometric figures (e.g., lines, splines, circles, and arcs)
  4. Create text using appropriate style and size to annotate drawings
  5. Use and control accuracy enhancement tools (e.g., entity positioning methods such as snap and XYZ)
  6. Identify, create, store and use appropriate symbols/libraries
  7. Create wire frame/ solid models
  8. Create objects using primitives
  9. Create 2-D geometry from 3-D models and 3D models from 2d drawings
- B. Edit Parametric Drawings
  1. Produce Parametric drawings
  2. Utilize geometry editing commands (e.g., trimming, extending, scaling)
  3. Utilize non-geometric editing commands (e.g., text, drawing format)
  4. Control coordinates and display scale
  5. Control entity properties (e.g., color, line type)
  6. Use standard parts and/or symbol libraries
- C. Parametric Plotting
  1. Plot drawings on media using correct layout and scale
  2. Use proper line techniques and color on parametric drawings.
  3. Configure plotters
- D. Analyze

1. Use query commands to interrogate database (e.g., entity characteristics, distance, area, status)
- E. Software
1. Create materials and textures to create raster image from a vector image
  2. Produce simple animations

## Learning Assessments:

Competencies may be evaluated by multiple measures, including exams, papers, article reviews, research, experiments, and projects.

## Instructional Materials:

[SolidProfessor](#)

### **Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition**

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the “Disabilities Self-Identification Form” on our [Disability Services website](#).

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.

### **A Note on Harassment, Discrimination and Sexual Misconduct**

Highland Community College seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX, and College policy prohibit harassment, discrimination and sexual misconduct. Highland Community College encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to report to the Vice President for Student Services, the Human Resources Director or complete an [online report](#) about what happened so that they can get the support they need and Highland Community College can respond appropriately.

There are both confidential and non-confidential resources and reporting options available to you. Highland Community College is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please review our [Equity Grievance Policy](#).