HIGHLAND COMMUNITY COLLEGE

Department:

Engineering Graphics and Technologies

Course Description:

This course teaches advanced concepts of drafting communication as it pertains to mechanical engineering and processes of manufacturing. Subjects include line types, orthographic projections, sectioning, language, auxiliary views, pictorial drawings, and scale usage.

Course Competencies:

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

1. Use advanced drawing media and related drafting materials.
2. Apply correct annotation to drawing, line styles and weights, dimensioning and title blocks.
3. Create and place appropriate drafting views.
4. Convert 2D and 3D drafting and models to CNC code using conversion software.
5. Apply tooling practices for machining.
6. Convert a 3D scan to a CAD/Parametric model.

Course Content:

A. Work with equipment related to CNC applications
B. Project based designs related to field of study
C. Collaborate to solve design problems
D. Practice standards and properly detail a working project for conveying a design solution
E. Apply safety-shop-machine-tool
F. Apply metrology skills
G. Demonstrate CNC Machining Skills and 3D printing
H. Demonstrate an understanding of machinable materials
I. Demonstrate the ability to convert a 3D scan to 3D model

Learning Assessments:

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

Instructional Materials:

Textbook: Jensen, C., Helsel, J. D., & Short, D. R. (2007). *Engineering Drawing and Design* (7th ed.). McGraw-Hill. ISBN-13: 978-0-07-352151-0

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.