Department:

Engineering & Graphic Technologies

Course Description:

This advanced course will cover hardware, networking, and Internet concepts. The course will cover how to install hardware devices, interrupts, jumpers, and switches, as well as troubleshooting. Network protocol, operations and concepts will also be covered. The course will also focus on accessing information on the Internet and using e-mail and news groups.

Course Competencies:

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

1. Create new drawings
   a. Create wire frame and/or solid models
   b. Create non-analytic surfaces using appropriate modeling
   c. Create analytic surfaces using appropriate modeling with planes and analytic curves
   d. Create offset surfaces
   e. Find the intersection of two surfaces
   f. Create joined surfaces
   g. Create a fillet or blend between two surfaces
   h. Create feature-based geometry
   i. Create cut sections
   j. Construct and label exploded assembly drawings
   k. Perform Boolean operations

2. Perform editing tasks
   a. Trim surface
   b. Manipulate surface normals
   c. Extend surface
   d. Edit control points
   e. Modify geometry via Boolean operations
   f. Edit primitives

3. Perform manipulation tasks
   a. Perform axis view clipping
   b. Extract wire frame data from surface/solid geometry
   c. Shade/render object

4. Perform analysis
   a. Extract geometric data
   b. Extract attribute data
   c. Identify gaps in non-intersecting surfaces
   d. Obtain surface properties
5. Develop CAD productivity and work habits
   a. Perform customization to improve productivity
   b. Manipulate associated non-graphical data
   c. Use template and library files to establish drawing standard presets

6. Develop relevant software competency
   a. Produce AutoCAD drawings
   b. Produce Solidworks drawings
   c. Produce Inventor drawings
   d. Produce Revit Architectural drawings
   e. Produce Autodesk Max Visualization drawings
   f. Produce and edit materials, textures, and lighting
   g. Produce an animation, add sound, and edit

Course Content:

A. Creating new drawings
B. Editing
C. Manipulation
D. Analysis
E. CAD Productivity
F. Software

Learning Assessments:

Competencies will be assessed by assignments, case problems, quizzes, chapter tests, hands-on projects, lab assignments, midterm test, and final test. The tests may be in the objective format or in a problem solving format.

Instructional Materials:


Software: AutoCAD, 3Ds Max, Maya, Solidworks, Inventor, Adobe PhotoShop, Adobe Illustrator

Internet Resources: 3Dcafe.com, 3Dtotal.com, 3Dspline.com, 3Dbuzz.com.
http://students2.autodesk.com/?nd=m_home. and many others.

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.

On-Campus Students: At enrollment, any on campus student may complete a form that will allow them to self-identify any disability.

Off-Campus Regional Students: Self-identify your disability and accommodation needs with the Regional Coordinator and/or instructor, preferably prior to the first class meeting.

Online Students: Self-identify your disability and accommodation needs by contacting the Disabilities Coordinator. Students must provide their own programs to allow accessibility on their home computer.

Any student may also identify their disability by completing an online form located on the HCC homepage under Students Services/Resources/Disabilities. Questions should be directed to the Disabilities Coordinator.