GE101B MCAD – Engineering Graphics and Design

Spring Semester 2017

Lecturer: Jim Leake   309 Transportation   244-0401   jmleake@illinois.edu

Teaching assistants: Sagnik Das, Ameet Mathew, Aishwarya Anandan

Course structure: (Credit & contact hours)		
Credit hours	three	
Lecture	twice a week for one-hour period	
Modeling Lab	once a week for two-hour period	
Sketching Lab	once a week for one-hour period	

Text: *Engineering Design Graphics: Sketching, Modeling, and Visualization,* 2nd edition, by Leake and Borgerson

Web: Illinois Compass (http://compass.illinois.edu)
Autodesk Education Community
Inventor 2017 Essential Training, John Helfen, Lynda.com

Supplies: Portable storage device (USB flash device or portable HD)
Mechanical pencils - 0.5, 0.7 mm

Software: Autodesk Inventor Professional 2017, Autodesk SketchBook

Hardware: Dimension SST 1200 3D printer
iPad Air tablets
Creaform handheld laser scanner
David SLS-2 structured light scanner
Microscribe G2X digitizer
Wacom Cintiq 21ux interactive pêne display
HP T1100ps 44" DesignJet Printer

Grading:

30%	2 Written exams
20%	2 Modeling exams
20%	Design project
17%	Lab assignments (modeling, sketching)
13%	Miscellaneous (sketch portfolio, quizzes, assignments)

Course Goals:

1. To develop spatial visualization and reasoning skills.
2. To gain familiarity with the standards and conventions of engineering design graphics.
3. To use geometric modeling software (e.g., parametric) as a design and visualization tool. Emphasis placed upon learning general modeling concepts and techniques.
4. To gain exposure to digital simulation and prototyping tools commonly used in product design.
5. To develop sketching skills using pencil and paper, and digital tablets.
6. To introduce engineering design methodology, and to demonstrate the role of graphics in the engineering design process.
7. To provide insight into the product design process, in particular as it relates to the architecture and functionality of the product.