DATE OF LAST REVIEW: 2/15/2013

CIP CODE: 15.1302

SEMESTER: Departmental Syllabus

COURSE TITLE: Cad Systems

COURSE NUMBER: ENGR-0257

CREDIT HOURS: 3

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: 913-334-1100

EMAIL: KCKCC-issued email accounts are the official means for electronically communicating with our students.

PREREQUISITE(S): ENGR-0106, Computer Aided Drafting

REQUIRED TEXT(S): Please check with the KCKCC bookstore, http://www.kckccbookstore.com for the required text for your particular class.

COURSE DESCRIPTION: This course is designed for the person that will maintain daily operation of CAD systems. Information covered will be hardware selection, drawing naming and archiving techniques, keeping time records, file recovery techniques, using Windows to organize hard disk space, setting up CAD software for maximum performance, menu systems, symbol libraries, bill of material extraction, advanced CAD commands and an introduction to advanced Rendering. A continual shift from traditional drafting to computer aided drafting has created a need for individuals to learn management of CAD systems.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
Course content may vary, but will generally include the following:

I. Introduction to CAD Systems

II. Review of the CAD Workstation
   A. Hardware
   B. Software
III. Hardware Selection
   A. CPU’s
      1. Hard Discs
      2. Floppy Discs
      3. Serial and Parallel selection
      4. Optional Keyboards
      5. Monochrome
      6. Color, CGA, EGA, VGA, PGA, High Res
   B. Printers
      1. Dot Matrix
      2. Daisy Wheel
      3. Impact
      4. Ink Jet
      5. Laser
   C. Plotters
      1. Flat Bed
      2. Roll
      3. Thermal
      4. Electrostatic
      5. Pencil
      6. Multi pen
      7. Screen Capture
   D. Digitizing Tablets/Scanning
      1. Scanning-rastor images-Rastor Design
      2. Magnetic-Summagraphics
IV. Setting Up Software for Maximum Performance
   A. Symbol Libraries and Blocks
   B. Custom Menu’s
   C. Drawing, Naming and Archiving
   D. Formatting
      1. Hard Disks
      2. Floppy
      3. Dual Booting
   E. Organizing Hard disk space
   F. File management
   G. Directories
   H. Time management of drawings
   I. Menu’s systems-custom menus
      1. Screen
      2. Pull Down
      3. Buttons
      4. Image
      5. Tablet
   J. External references
V. Bill of Material Extraction
   A. Attributes
   B. Template files
   C. Basic
   D. Lotus
VI. Writing Marco’s and Using LISP Routines
   A. Auto-LISP – Making your own commands
   B. Aliases
VII. Three Dimensional Drawing and Shading
A. Review of 3-D drawing  
B. Software Updates-rendering  
C. 3D Studio (Time Permitting)

EXPECTED LEARNER OUTCOMES:

A. Upon completion of the course the student will be able to define CAD systems.  
B. Upon completion of the course the student will be able to identify the components of a CAD workstation.  
C. Upon completion of the course the student will be able to select hardware for a CAD workstation.  
D. Upon completion of the course the student will be able to set up software on a CAD workstation to achieve maximum performance.  
E. Upon completion of the course the student will be able to set up a Bill of Materials.  
F. Upon completion of the course the student will be able to write and use LISP ROUTINES.  
G. Upon completion of the course the student will be able to create and shade 3D drawings.

COURSE COMPETENCIES:

Upon completion of the course the student will be able to define CAD systems.
1. Upon completion of the course the student will be able to identify information associated with a CAD system.
2. Upon completion of the course the student will be able to define terms associated with a CAD system.

Upon completion of the course the student will be able to identify the components of a CAD workstation.
3. Upon completion of the course the student will be able to identify and differentiate between various hardware components of a CAD workstation.
4. Upon completion of the course the student will be able to identify and differentiate between different software packages used on a CAD workstation.

Upon completion of the course the student will be able to select hardware for a CAD workstation.
5. Upon completion of the course the student will be able to interpret data and determine the size of a hard disc.
6. Upon completion of the course the student will be able to identify a floppy disc.
7. Upon completion of the course the student will be able to identify and select a serial and/or parallel port.
8. Upon completion of the course the student will be able to identify optional keyboards.
9. Upon completion of the course the student will be able to identify monochrome monitors.
10. Upon completion of the course the student will be able to identify and differentiate between color, CGA, EGA, VGA, PGA, monitors.
11. Upon completion of the course the student will be able to identify and differentiate between dot matrix, daisy wheel, impact, ink jet, and laser printers.
12. Upon completion of the course the student will be able to identify and differentiate between flat bed, roll, thermal, electrostatic, pencil, multi-pen, and screen capture plotters.
13. Upon completion of the course the student will be able to identify and differentiate between electromagnetic and magnetic digitizing tablets.

Upon completion of the course the student will be able to set up software on a CAD workstation to achieve maximum performance.
14. Upon completion of the course the student will be able to create custom libraries and blocks on a CAD system.
15. Upon completion of the course the student will be able to create custom menu’s on a CAD system.
16. Upon completion of the course the student will be able to create, name and archive drawings in a CAD system.
17. Upon completion of the course the student will be able to format a hard and a floppy disc in a Cad system.
18. Upon completion of the course the student will be able to organize hard disc space on a CAD system.
19. Upon completion of the course the student will be able to effectively manage files on a CAD system.
20. Upon completion of the course the student will be able to create directories and manage menu systems on a CAD system. 
Upon completion of the course the student will be able to set up a Bill of Materials. 
21. Upon completion of the course the student will be able to establish attributes on items found on a bill of materials. 
22. Upon completion of the course the student will be able to utilize template files. 
23. Upon completion of the course the student will be able to demonstrate knowledge of basic and lotus. 
Upon completion of the course the student will be able to write and use LISP Routines. 
24. Upon completion of the course the student will be able to interpret data and write macro’s. 
25. Upon completion of the course the student will be able to use LISP Routines. 
26. Upon completion of the course the student will be able to use command aliases. 
Upon completion of the course the student will be able to create and shade 3D drawings. 
27. Upon completion of the course the student will be able to demonstrate knowledge of 3D drawing. 
28. Upon completion of the course the student will be able to interpret data and create and shade a 3D drawing. 

ASSESSMENT OF LEARNER OUTCOMES: 
Assessment methods may include, but are not limited to, the following: Homework, Assignments, Quizzes, Class Participation, Chapter Tests, and Final Exam. The grading scale and the process for calculating the course grades are to be determined by the individual instructors. This information will be included in each instructor’s syllabus. 

SPECIAL NOTES: 
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time. 

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding. 

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known. 

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center, in Rm. 3354 or call at: 288-7670.