SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 15.1302
SEMESTER: Departmental Syllabus
COURSE TITLE: Advanced Drafting
COURSE NUMBER: ENGR-0260
CREDIT HOURS: 4
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
EMAIL: KCKCC-issued email accounts are the official means for electronically communicating with our students

PREREQUISITE(S): None

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 provides students with the means by which they can do advanced drafting coursework and projects utilizing Inventor 3D Modeling Software and BIM (Building Information Modeling) 3D Architectural REVIT Software. Instruction will focus on advanced modeling using both software packages and students will complete advanced projects in each of them.

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. Precision Dimensioning
   A. Principles of Notation
   B. Surface treatment of metals
   C. Principles of tolerancing

II. Production Drawings
   A. Detail drawings
   B. Casting drawings
   C. Forging drawings
   D. Assembly drawings
   E. Welding drawings

III. Checking Drawings
   A. Methods of checking drawings
   B. Checking routines

IV. Inventor Advanced Modeling Techniques
   A. Creating a Design View representation in a part file.
   B. Creating Sweep Features.
   C. Shrink-wrapping an assembly.
   D. Embossing Text and Features.
   E. Creating Coil and Loft Features.

V. Inventor Advanced Assembly Modeling Techniques
   A. Creating Flexible Assemblies.
   B. Detecting Contact in Assemblies.
   C. Using the Frame Generator.
   D. Creating overlay drawing views.

VI. Working with Column Grids and Structural Layout in REVIT
   A. Adding and Modifying Grids.
   B. Loading and Modifying Structural Families.
   C. Copying Elements to Levels.
   D. Adding and Modifying Architectural and Structural Columns

VII. Developing an Exterior Skin in REVIT
   A. Creating and Changing Wall types.
   B. Creating and Modifying Curtain Walls.
   C. Building a Curtain System type.
   D. Building and Adding Stacked Walls.

EXPECTED LEARNER OUTCOMES:

A. Upon completion of the course the student will be able to demonstrate the ability to place precision dimensions on a drawing.
B. Upon completion of the course the student will be able to demonstrate the ability to create production drawings.
C. Upon completion of the course the student will be able to demonstrate the ability to check drawings for accuracy.
D. Upon completion of the course the student will be able to demonstrate the ability to utilize advanced modeling techniques in Inventor.
E. Upon completion of the course the student will be able to demonstrate the ability to utilize advanced assembly modeling techniques in Inventor.
F. Upon completion of the course the student will be able to demonstrate the ability to utilize advanced methods of working with column grids and structural layouts in REVIT.
G. Upon completion of the course the student will be able to demonstrate the ability to develop an exterior skin in REVIT

COURSE COMPETENCIES:

Upon completion of the course the student will be able to demonstrate the ability to place precision dimensions on a drawing.

1. Upon completion of the course the student will be able to demonstrate an understanding of the principles of notation.
2. Upon completion of the course the student will be able to demonstrate an understanding of the surface treatment of metals.
3. Upon completion of the course the student will be able to demonstrate an understanding of the principles of tolerancing.
4. Upon completion of the course the student will be able to interpret data and place specific notations on drawings.
5. Upon completion of the course the student will be able to interpret data and place tolerances on drawings.

Upon completion of the course the student will be able to demonstrate the ability to create production drawings.

6. Upon completion of the course the student will be able to interpret data and create detail drawings.
7. Upon completion of the course the student will be able to interpret data and create casting and forging drawings.
8. Upon completion of the course the student will be able to interpret data and create assembly drawings.
9. Upon completion of the course the student will be able to interpret data and create welding drawings.

Upon completion of the course the student will be able to demonstrate the ability to check drawings for accuracy.

10. Upon completion of the course the student will be able to identify three methods to check drawings for accuracy.
11. Upon completion of the course the student will be able to establish two different routines to check drawings for accuracy.

Upon completion of the course the student will be able to demonstrate the ability to simplify the drafting process.

12. Upon completion of the course the student will be able to use established procedures to simplify the drafting process.
13. Upon completion of the course the student will be able to identify ways to eliminate unnecessary work in the drafting process.
14. Upon completion of the course the student will be able to effectively use symbols on drawings.
15. Upon completion of the course the student will be able to effectively use notations on drawings.
16. Upon completion of the course the student will be able to interpret drawing title block data information.
17. Upon completion of the course the student will be able to identify superfluous dimensions on a drawing.
18. Upon completion of the course the student will be able to identify and place surface texture data on a drawing.
19. Upon completion of the course the student will be able to identify and place geometric dimensioning symbols on a drawing.

Upon completion of the course the student will be able to demonstrate the ability to utilize advanced modeling techniques in Inventor.

20. Upon completion of the course the student will be able to create a part using sweep features.
21. Upon completion of the course the student will be able to demonstrate the ability to create coil and loft features on a part.
22. Upon completion of the course the student will be able to add embossing text to a part.
23. Upon completion of the course the student will be able to demonstrate the ability to shrink-wrap an assembly.

Upon completion of the course the student will be able to demonstrate the ability to utilize advanced assembly modeling techniques in Inventor.

24. Upon completion of the course the student will be able to demonstrate the ability to detect interference between parts in an assembly.
25. Upon completion of the course the student will be able to create overlay drawing views.
26. Upon completion of the course the student will be able to utilize advanced assembly modeling techniques to create flexible assemblies.

Upon completion of the course the student will be able to demonstrate the ability to utilize advanced methods of working with column grids and structural layouts in REVIT.

27. Upon completion of the course the student will be able to load and modify structural families in REVIT.
28. Upon completion of the course the student will be able to copy elements to levels in REVIT.
29. Upon completion of the course the student will be able to add and modify structural column grids in REVIT.
30. Upon completion of the course the student will be able to add and modify architectural and structural columns in REVIT.

Upon completion of the course the student will be able to demonstrate the ability to develop an exterior skin in REVIT.
31. Upon completion of the course the student will be able to create and modify curtain walls in REVIT.
32. Upon completion of the course the student will be able to design and build a curtain wall system type.
33. Upon completion of the course the student will be able to design, build, and add stacked walls in REVIT.

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.