SYLLABUS

DATE OF LAST REVIEW:	03/2017
CIP CODE:	15.1302
SEMESTER:	Departmental Syllabus
COURSE TITLE:	Fundamentals of Parametric Modeling
COURSE NUMBER:	ENGR-0152
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):	ENGR-0106, Computer Aided Drafting
REQUIRED TEXT:	Please check with the KCKCC bookstore, http://www.kckccbookstore.com for the required text for your particular class.

COURSE DESCRIPTION:
This course is designed to provide the student with the ability to utilize Parametric Modeling Software to design and construct working solid models and assemblies. While designing and constructing solid models, students will also learn the finer points of dimensioning, tolerancing, fits, fastening devices, gears, cams, welding drawings, assembly and working drawings as well as an understanding of drafting standards and industrial drafting practices.

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:

I) Dimensioning and tolerancing.
   A) Definitions of terms

B) Fits between mating parts
C) Tolerances and processes
D) Positional tolerances
E) Geometric tolerances

II) Threads, fasteners and springs
A) Screw thread standards
B) Types of threads
C) Thread terminology
D) Representing threads
E) Common bolts and nuts
F) Miscellaneous fasteners

III) Welding Drawings
A) Types of welding drawings
B) Common materials and types of welding rods
C) Welding symbols

IV) Gears
A) Speed ratios, pulleys, cams and gears
B) Gear types
C) Shape of gear teeth
D) Cutting data
E) Definitions and formulae

V) The Software User Interface and Command Options
A) 2D Sketching
B) 3D Modeling

VI) Working with Templates
A) IPT Templates
B) IDW Templates
C) IPN Templates
D) IAM Templates

VII) Working with Projects
A) Setting up the Project Folder
B) Activating the Project Folder

EXPECTED LEARNER OUTCOMES:

A. Upon completion of the course the student will be able to demonstrate the ability to dimension and place tolerances on a drawing.
B. Upon completion of the course, the student will be able to demonstrate the ability to draw threads, fasteners and springs.
C. Upon completion of the course, the student will be able to create welding drawings.
D. Upon completion of the course, the student will be able to demonstrate an understanding of gears, cams and pulleys.
E. Upon completion of the course, the student will be able to efficiently navigate and utilize the User Interface.
F. Upon completion of the course, the student will be able to demonstrate the ability to distinguish between and utilize templates.

G. *Upon completion of the course, the student will be able to demonstrate the ability to effectively utilize Project Folders to complete 2D drawings and 3D models.*

COURSE COMPETENCIES:

Upon completion of the course the student will be able to demonstrate the ability to dimension and place tolerances on a drawing.

1. Upon completion of the course, the student will be able to interpret data and place dimensions on a drawing.
2. Upon completion of the course, the student will be able to interpret data and place tolerances on a drawing.
3. Upon completion of the course, the student will be able to define terms related to technical drawings.
4. Upon completion of the course, the student will be able to determine the difference between a clearance and an interference fit on a technical drawing.
5. Upon completion of the course, the student will be able to demonstrate the ability to place geometric tolerances on a technical drawing.

Upon completion of the course, the student will be able to demonstrate the ability to draw threads, fasteners and springs.

6. Upon completion of the course, the student will be able to draw threads on a technical drawing using the detailed representation method.
7. Upon completion of the course, the student will be able to demonstrate the knowledge of the three major applications of threads.
8. Upon completion of the course, the student will be able to distinguish the difference between square, acme, buttress whitworth, and knuckle threads.
9. Upon completion of the course, the student will be able to distinguish the difference between keys, rivets, and springs.

Upon completion of the course, the student will be able to create welding drawings.

10. Upon completion of the course, the student will be able to demonstrate knowledge of welding terminology.
11. Upon completion of the course, the student will be able to interpret welding symbols.
12. Upon completion of the course, the student will be able to demonstrate the ability to place welding symbols on a technical drawing.
13. Upon completion of the course, the student will be able to analyze and interpret data to create welding drawings.
14. Upon completion of the course, the student will be able to identify and interpret welding symbols.

Upon completion of the course, the student will be able to demonstrate an understanding of gears, cams, and pulleys.

15. Upon completion of the course, the student will be able to analyze and interpret data to draw gears, cams, and pulleys.
16. Upon completion of the course, the student will be able to define gear terminology.
17. Upon completion of the course, the student will be able to define cam terminology.
18. Upon completion of the course, the student will be able to define pulley terminology.
19. Upon completion of the course, the student will be able to interpret gear-cutting data.

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Upon completion of the course the student will be able to efficiently navigate and utilize the Parametric Modeling program User Interface.

20. Upon completion of the course, the student will be able to identify and utilize draw command options in Parametric Modeling programs.
21. Upon completion of the course the student will be able to identify and utilize modify command options in Parametric Modeling programs.
22. Upon completion of the course, the student will be able to differentiate between 2D sketch and 3D modeling commands in Parametric Modeling programs.
23. Upon completion of the course, the student will be able to create a 2d Sketch in Parametric Modeling programs.
24. Upon completion of the course, the student will be able to create a 3d Model in Parametric Modeling programs.

Upon completion of the course, the student will be able to demonstrate the ability to distinguish between and utilize templates.

25. Upon completion of the course, the student will be able to create a 2D sketch using a template file.
26. Upon completion of the course, the student will be able to create a 3D Model using a template file.
27. Upon completion of the course, the student will be able to create a multi-view drawing using a template file.
28. Upon completion of the course, the student will be able to dimension a multi-view drawing using a template file.
29. Upon completion of the course the student will be able to create an assembly drawing using a template file.
30. Upon completion of the course, the student will be able to insert and place a parts list using a template file.
31. Upon completion of the course, the student will be able to insert and place balloons using a template file.
32. Upon completion of the course, the student will be able to assign motion to an assembly using a template file.

Upon completion of the course, the student will be able to demonstrate the ability to effectively utilize Project Folders to complete 2D drawings and 3D models.

33. Upon completion of the course, the student will be able to set up a project folder.
34. Upon completion of the course, the student will be able to activate a project folder.

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 disabilities services office at (913) 288 -7664.

All enrolled students at Kansas City Kansas Community College are subject to follow all rules, conditions, policies and procedures as described in both the Student Code of Conduct as well as the Student Handbook. All Students are expected to review both of these documents and to understand their responsibilities with regard to academic conduct and policies. The Student Code of Conduct and the Student Handbook can be found on the KCKCC website.