EGR 165 - Computer - Aided Design
Computer Science, Engineering, and Physics (CSEP) Department
Fall 2014

Instructor: Ulan Dakeev
Schedule: Section 02: M/W 9:00am – 10:45am
Office: Campus Murchie Science Building 112b
Office Hours: Th 10:00am – 11:00am
Phone: (810) 762-0070
E-mail: dakeev@umflint.edu (This is the fastest way to communicate with me.)
Web Page: http://bb.umflint.edu (all class materials)
Textbook: Designing with Creo Parametric
Michael J. Rider
eText: ISBN-10 0-07-759883-0, ISBN-13 978-0-07-759883-9
Print: ISBN-10 0-07-802122-7, ISBN-13 978-0-07-802122-0
Software: **http://www.ptc.com/appserver/wcms/forms/index.jsp?&im_dbkey=86840&im_language=en**

Course Description:
The purpose of this course is to enable students to develop increased knowledge and proficiency in the use of computerized solid modeling techniques. Students taking this course should be able to develop parts, assemblies and related engineering drawings. It involves parametric solid modeling using the software Creo 2.

Course Organization:
The scheduled class meeting times will be used for instructional lectures, demonstrations, lab work, discussion, and evaluation.

Assignments:
There will be two types of assignments: In-class Labwork Assignments (LW) and Homework Assignments (HW). LW assignments will be given based on the techniques discussed in the class. Unless otherwise specified by the instructor, in-class lab assignments must be completed in the class meeting hours.

Group Project:
There will be a collaborative design project assignment to be completed by each group of 3 to 4 students. Groups will be formed and each group will submit a project proposal for approval by the instructor. Group projects may also be assigned by the instructor. The presentation time is 15 minutes with 3 minutes for questions and answers.

Observed Performance:
Each student will be given a score (out of 10%) based on attendance and observed performance. This evaluation includes such factors as problem solving ability, initiative, attitude, attendance, participation in class/group activities etc.

Exam, Tests and Quizzes:
There will be a comprehensive final exam and one midterm exam. Two class quizzes/tests could also be given at suitable points during the semester to assess progress of the class.

Student Learning Outcomes:
(Based on Bloom's taxonomy of cognitive domain as marked in parenthesis after each learning outcome)

1) The student will state basic concepts of constraint-based modeling. (knowledge)
2) The student will identify three-dimensional geometry derived from two-dimensional projection drawing. (analysis)
3) The student will select appropriate modeling techniques within Creo Parametric to create solid models of given orthographic drawings. (application)
4) The student will produce engineering documentation, orthographic views, line types, and general tolerances using Creo Parametric. (application)
5) The student will generate, modify, apply dimensional relationships between parts, and assemble mechanisms in Creo Parametric assembly mode using new and existing parts. (synthesis)

The student learning outcomes above will be achieved by means of reading assignments, homework assignments, lecture slides, lectures, and learn-by-doing style using in-class design exercises.

Final Exam Schedule

9: 00 am – 10: 45 am. Monday, December 8th, 2014.

Final Grading: Final grades will be determined by assigning the following weighting to each area:

Attendance and Observed Performance:	10%
Homework Assignments:	20%
In-class Labwork Assignments:	10%
Project:	10%
Mid Term Exam/Quiz/Test:	20%
Final Exam:	30%

Grading Scale

A+ (97-100)	**A (94-96)**	**A- (90-93)**
B+ (87-89)	**B (84-86)**	**B- (80-83)**
C+ (77-79)	**C (74-76)**	**C- (70-73)**
D+ (67-69)	**D (64-66)**	**D- (60-63)**
E (<60)		

Homework Remarks:

- The parts made for each of the problems handed in should be generated by student's individual effort. Students can discuss the approach to problems with other students, however the final results must be student's individual work and should not be copied from someone else. **Homeworks are due at the beginning of classes**
- **Late homework will not be accepted! No exceptions! No excuses!**
- No email submission of homework is accepted unless directed to by the instructor. Only submission via BB or hard copy will be accepted.

Academic Honesty and Integrity (Statement on Cheating): Students should read and understand the UMFLINT policy on academic honesty and integrity. When under the pressure of deadlines, students may be tempted to copy another student's work and hand it in as their own. Before yielding to such temptations, the student should be aware that he/she will be considered for failure for the course (grade "F").
(http://catalog.umflint.edu/content.php?catoid=9&navoid=452#Student_rights)

NOTE: This syllabus represents a general plan for the course and deviations from this plan may be necessary throughout the duration of the course.

Tentative Schedule

Date	Topics	Quiz/Test	Assignments Due (Beginning of Class)	
			Activity	**Assignment**
Week 1	Intro to parametric design, solid modeling concepts, Creo working environment. Managing files, Sketching (Chapters 1, 2, & 3)		*September 3rd*	Labwork
Week 2	Solid modeling functions: 3D Tools: Shell, Rib, Hole.		*September 8th*	HW1 Labwork
Week 3	Revolved features and Variable Section Sweep (VSS)/Helical Sweep.		*September 15th*	HW 2 Labwork
Week 4	Patterns (Chapter 6). Directional, Radial	Quiz 1	*September 24th (Wed)*	HW 3 Labwork
Week 5	Introduction to Drawing: Drawing Format, Drawing Views, and Dimensioning.	*Monday September 29th*	***1-M HW Assigned***	HW 4 Labwork
Week 6	Section View, Auxiliary View, Detail View			HW 5 Labwork
Week 7	Assemblies (Chapter 9)	*October 6th*	**Reverse Engineering Project**	HW 6 Labwork
Week 8	Assemblies	**Midterm Exam**	*October 15th*	HW 7
Week 9	Assembly Drawings (Chapter 10)	**Review of the project.**	*October20th*	Labwork
Week 10	BOM, Balloons		*October 27th*	HW 8 Labwork
Week 11	Relations and Family Tables – Intro to Tolerancing	*November 3rd*	***1-M HW Due***	Labwork
Week 12	GD&T	Quiz 2	*November 5th Wednesday*	HW 9 Labwork
Week 13	Reverse Engineering Project	*November 10th*	*Posters*	HW 10
Week 14	In Class Presentations	Presentations **Posters Due**	*November 17th* 19th	**Project Due** Labwork
Week 15	FEA	*November 24th*		HW 11 ECW – Maybe
Week 16	Final Exam Review			
Week 16	**Monday, December 8th**	**Final Exam**		