Syllabus

IE 1051 Elective: Engineering Product Design

Spring Semester 2024

Lecture Times:	W 7:20~9:55 pm	**Instructor:**	Dr. Jin Xu
Classroom:	4-212	**Office:**	4-219
Office Hours:	R 1~4 pm	**Email:**	jin.xu@scupi.cn

Catalog Description:

This 3-credit course aims at a wholistic process of industrial product design and is an introduction to solid and parametric modeling techniques. The lessons proceed in pedagogical fashion to guide students from construction basic shapes to building intelligent complex solid models and creating multi-view drawings. The students are expected to take a hands-on, exercise intensive approach to all the important parametric modeling and concepts that helps them in their future design courses.

Course Outcomes:

Upon completion of this course, students will be able to:

- Develop an understanding of the iterative engineering design process.
- Demonstrate proficiency in technical communication, including conveying graphical mechanical engineering information and delivering orthographic, part, and working drawings.
- Use parametric modeling software *SolidWorks* to graphically communicate 3-D designs of moderate complexity.
- Apply a structured process to the creative generation, refinement, and selection of potential design concepts.
- Experience a product design process and enhance creativity

Required Textbook:

David C. Planchard, *Engineering Design with SOLIDWORKS 2022*.

Course Policies:

Regular class attendance is expected. Each student is responsible for both in-class activities and homework assignments. Exams will emphasize sketching and modeling skills covered in lectures. In general, no late in-class activities or make-up exams will be given. Exceptions will be made for a valid excuse consistent with University Policy. If you cannot attend an exam or meet a due date, you must contact the instructor ***prior to*** the exam or due date.

Integrity and Academic Expectations:

"Violations of academic integrity include, but are not limited to, cheating, plagiarism, or misrepresentation in oral or written form. Such violations will be dealt with severely, in accordance with University policy. Plagiarism means representing someone else's idea or writing as if it were your own. If you use someone else's ideas or writing, be sure the source is clearly designated." It is expected that students adhere to the academic integrity policy that is presented in the Student's Honor Code of Conduct / Student Handbook.

Students with Disabilities:

If you have special needs because of a learning, physical, or other disability, please contact the instructor in advance so accommodations will be provided in a timely manner.

Grading Policy:
Final = 30%, In-Class Activity = 20%, Project = 30%, and Homework = 20%. Please go to Grade Center on BB for up-to-date grades. Grades will ***not*** be curved, and the official SCU grading scale will be used when determining your final letter grade (based on the numerical grade).

Tentative Course Schedule:

Week	Topics
1	CAD & CAM
2	SolidWorks Fundamentals
3	Basic Sketching
4	Sketching
5	Modeling
6	Part Modeling
7	Advanced Modeling
8	Views
9	Part Drawings
10	Assembly
11	Working Drawings
12	Intro to CSWA
13	Surface Modeling
14	Sheet Metal
15	Failure Prediction
16	Product Optimization
17	**Final Exam**
18	End of Semester