Diablo Valley College

ENGIN-129-8765
Fall Semester – 2014 / (4 Units)
Indust-129: Product Design I Using SolidWorks

INSTRUCTOR

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Office Hours: M & W 5:30-6:00 & Online by Email

MEETING INFORMATION

08/15/2014-12/17/2014 Lecture: Tuesday, Thursday 06:00PM - 07:00PM, Engineering Technology, Room 116 Laboratory: Thursday, Thursday 07:00PM - 08:50PM, Engineering Technology, Room 116

TEXTS

Beginner's Guide to SolidWorks 2014 – Level 1 - Reyes, Alejandro
The Design of Everyday Things, Revised and Expanded Edition (2013) - Norman, Donald

MATERIALS

Each student needs his/her personal flash drive to store his/her assignments in the lab.
Sketch Pad / Pencils / Clear Ruler

COURSE CONTENTS

The course introduces Industrial Design principles and provides corresponding rapid prototyping skills with CNC milling machines and 3D printers. Students explore the processes required to design new consumer products. SolidWorks 3D CAD modeling is incorporated into the product development cycle as a basis for design, simulation, and manufacturing. Previous knowledge of SolidWorks software is not required. CSU

INDUSTRIAL DESIGN PROJECTS:

Class Assignments (drawings & computer exercises)	100 points
Furniture (Contract)	100 points
Toy Design	100 points
Mobile Device Design (phone/game controller)	100 points
Transportation Design (vehicle)	100 points
Final Project	100 points

GRADING

Your class grade will be determined on the basis of the percentage of the total points obtained out of the above 600 points as shown below.

Grade A	90 to 100%
Grade B	80 to 89 %
Grade C	70 to 79 %
Grade D	60 to 69 %
Grade F	0 to 59 %

CONTENT:

A. Design Language
1. Introduce Industrial Design rationale
2. Current Industrial Design trends in market
3. Aesthetics of form and function
4. Emotional design and consumer psychology

B. Drawing
1. Fundamentals of sketching and line types
2. 1-point, 2 point, & 3 point perspective
3. Dimensioning lengths, angles and arcs

C. Creating 3D Solid CAD Drawings
1. Extrusions
2. Rotations
3. Sweeps
4. Lofts

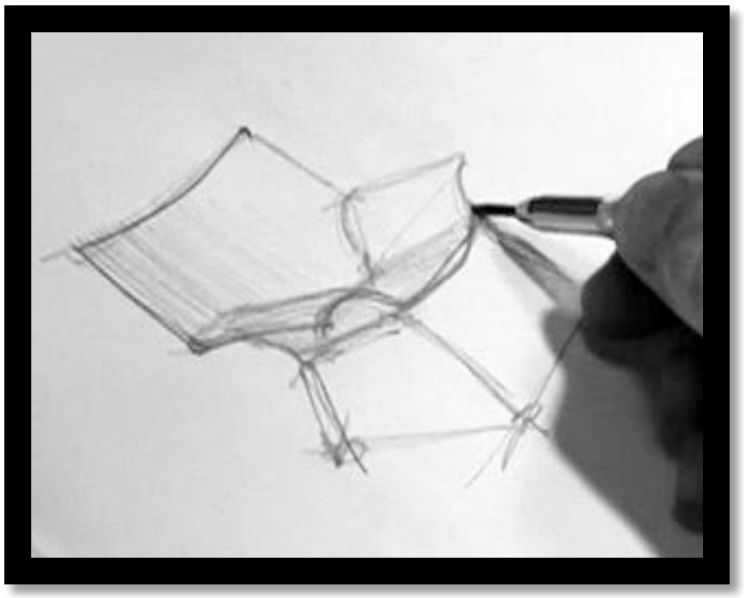
D. 3D CAD Material Removal Tools
1. Swept and rotated cuts
2. Extruded and lofted cuts
3. Drilling and threading holes

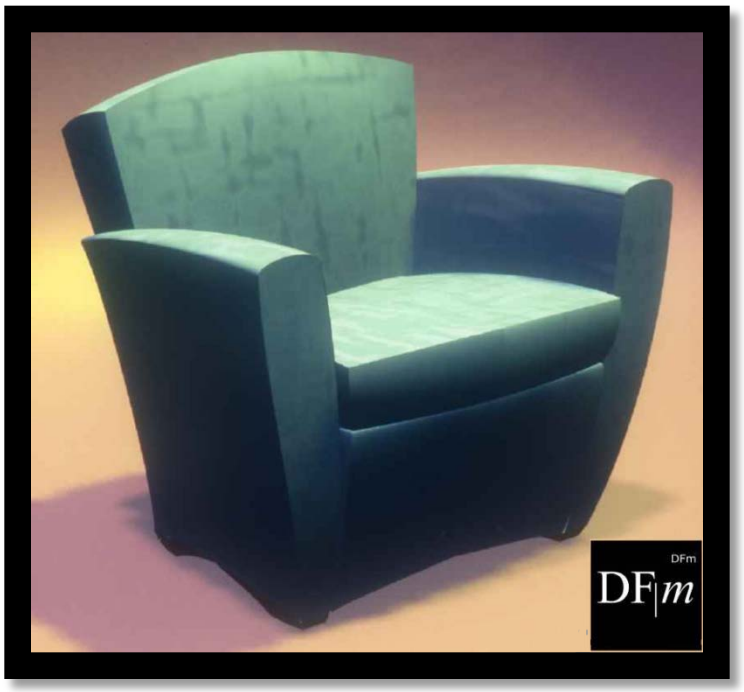
E. Working Drawings
1. Import Views
2. Dimensioning
3. Callouts
4. Paper Sizes and orientation selection

F. Prototyping
1. Materials and Processes
2. 3D Printing (adding materials)
3. CNC machining (subtracting materials)

G. Prototyping
1. Materials and Processes
2. 3D Printing (adding materials)
3. CNC machining (subtracting materials)

H. Presentation
1. Outline formats for an effective speech
2. Oral Presentation Strategies
3. Visual Displays





STUDENT RESPONSIBILITIES

Come to class. If a student misses more than 3 class sessions they may be **dropped**. However, students are responsible for dropping themselves with the DVC admissions and records office.

Arrive **on time**. Late comers are disruptive to the class. Latecomers may also miss important information presented at the beginning of class; such as assignment and lab changes.

Let the instructor know if you require any **special considerations** such as special seating, an interpreter, or any other aid which helps you to learn. These considerations are considered confidential. DVC offers a large array of services for the disabled so please contact the DSP office at ext. 2684

Mute all cell phones. No texting during class.

Conduct themselves in a **professional manner**; refraining from talking in class except as part of a classroom discussion or to ask a question.

Be prepared for class by **reading** or acquiring the information about the scheduled lecture and to be prepared to ask questions during and/or after the lecture.

Know and adhere to **due dates** for all assignments, tests, quizzes and the final project.

Check the class **web page** for any changes to the schedule and/or due dates.

Take **class notes**.

Keep **records** of your own work until you have received your final grade from the DVC admissions and records office.

Spend as much time as needed in order to satisfactory c**omplete all assignments**. Assignments vary in difficulty and length and some may take more time than others. The standard formula for college course work is that for every hour of class time (lecture) the student will spend between 2 and 3 hours doing homework. Since this class has 2 hours of lecture each week, each student should plan to spend 4 to 6 hours outside of class working on homework.

Know and follow all DVC policies and procedures. This includes **plagiarism and cheating.**

Let the instructor know if **you are having difficulty** with any part of the course. Special time can be arranged for individual assistance.

LATE ASSIGNMENTS

Each assignment is due at the end of each class date. An assignment must be turned at the end of each class meeting. Normally, an assignment turned in after the "due date" will not be accepted.

MAKE-UP PROJECTS

Generally, there will be no make-up projects. Under exceptional circumstances, a make-up project may be given if a student presents a valid excuse for missing the project. Valid excuses include official school activities or illness severe enough to require a visit to the doctor.

ATTENDANCE

Students are expected to attend all lab sessions. If a student is absent from a lab session, he/she is still responsible for all announcements made during the lecture.

WITHDRAWAL

I may drop a student if he/she misses more than two weeks of the course; however, this is not automatic. I am not responsible for withdrawing a student. The student is responsible for withdrawing from the course. To drop a class, the student must go to the registrar and submit a drop card before the drop deadline.

ACADEMIC INTEGRITY

Students may legitimately receive help from other students, lab assistants, and others. However, the completed assignment must be the result of a student's own effort. It is improper to provide or receive drawings or computer files of an assignment in any form. If this should happen, all the parties willingly involved will receive an "F" letter grade on the project and will also be considered for class expulsion.

DISABILITIES

Students with disabilities may receive assistance through the Disabled Students Services Center. You may also setup an appointment in the Counseling Center to be tested if you suspect you have a learning disability.

TUTORING

If you required additional tutoring in other subjects, free tutoring services are offered. You may drop in for immediate tutoring at most labs, but some require that you make an appointment. Check the schedules posted on the DVC website or outside the tutoring labs. What can you expect from tutoring? The tutors will not do your homework for you, but they will help you build your critical thinking and study skills, prepare for tests, develop problem-solving skills, and organize essays. Who benefits from tutoring? Many students think that "good" students will not benefit from tutoring. However getting help to keep up with your work can strengthen your understanding of the course material. To get the most out of your experience at DVC, take advantage of the free tutoring available to you.