Western Michigan University
EDMM 1430 PRODUCT DESIGN FUNDAMENTALS - Syllabus

Course Description

The course is intended to give students exposure to product development as done by an Industrial Designer. There will be engineering and art-based approaches to solving problems, (form *and* function).

Prerequisites

To succeed you need a desire to think, ask questions and avoid your personal stereotypes to solve design problems. You may want to become a designer or just learn about design while following another career. All interested people are welcome. We are happy to train future engineers, advertisers and business managers in design fundamentals.

Objective

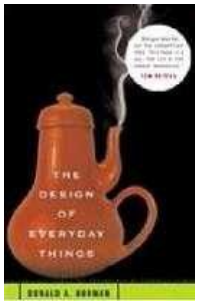
1. Overview of product development from an industrial design perspective and how it is a part of product development and manufacturing. Engineering, design and marketing may all have different perspectives when a new product is developed.
2. Design Thinking - Learning basic ideation, visualization, sketching, and modeling techniques. This is how you communicate an idea.
3. Fundamentals of philosophy, psychology and history of design.
4. Create! Build projects from sketch to sketch model to final model.
   - Project 1-2: **Tangram 2D and 3D geometric forms**, sketch modeling in paper and foam core
   - Project 3: **Organic Form Project**, modeling in rigid foam
   - Project 4: **Energy Efficient Paper Light**, Working Model!!!!
   - **Alternative Final Project** Possibilities will be offered. Some of these have become senior projects.

All projects will begin and end on studio days. Projects will not be due on a lecture day.

Questions about projects are welcome any day, (you can find me or make an appointment.

Text Books

Books are at;
- Bernhard Center
- local bookstores
- on line at BestBookBuys.com Amazon.com and BN.com



Required

The Design of Everyday Things, (DOET), by Donald Norman. Superior introduction to the thinking behind design. *ANY* edition will work. Easy to find used.

Optional

Used copy of the book

The Look of the Century, (LOTC), Edited by Michael Tambini. This book is a valuable resource of ideas for every studio class and design history.

Each student will be given copies of the pages covering the brief design history for the quizzes starting week nine, (9)

Optional *if you want to pursue more drawing. Best to buy a used copy.* Rapid Viz. Your introduction to drawing techniques. Buy it if you have little or no drawing experience.

Tentative Schedule	Week	The instructor may alter the schedule of the projects but not the total work for the class.
	1	Introduction - What is Product Design / Industrial Design? Sketchbooks and why you always want to have paper with you. The "C" word…….. Constraint. IDSA.org and IDEO.com
	1	IDEO video**.** What's in our future? Tour of studios and rooms. Sketching and perspective exercises in class. Long Day – be ready to think. There will be breaks.
	2	DOET Chap 1 quiz and discussion on the first class of each week. What can design do?
	2	**Tangram 2D - begin**; Cutting and Presentation demo. Studio Time - Work on 2D Tangram.
	3	DOET Chap 2 quiz and discussion
	3	**2D Tangram due - critique.** **Sketch model making demo, foam core & boards.3D Tangram – begin** "Sketches of Frank Gehry", film, first 10 minutes so show modeling and his home. Sketch model making demo, foam core & boards,
	4	DOET Chap 3 quiz and discussion
	4	**3D Tangram due - critique** **Domestic Water Device – begin. Ideation sketching**
	5	DOET Chap 4 quiz and discussion Critique of Domestic Water Device ideas.
	5	Sketch model demo - foams
	6	DOET Chap 5 quiz and discussion.
	6	**Domestic Water Device, part 1 due - critique.** Assign line extension of Domestic Water Device.
	7	DOET Chap 6 quiz and discussion
	7	Studio day – work in class
	8	DOET Chap 7 quiz and discussion Domestic Water Device due - critique
	8	Final Project / Paper Light Source**, ideation begins.**
	9	Look of the Century, (LOTC) 1900-19 history quiz and discussion
	9	Studio Day - work on Final Project
	10	LOTC 1920-39 history quiz and discussion Paper Light Source road trip to Giftloft or D2
	10	Final Project Idea critique in class – sketches on the walls. Start Sketch model
	11	LOTC 1940-59 history quiz and discussion Final Project – Evolve your design sketch model
	11	**Final project Sketch model critique.** Determine if other modeling techniques are needed.
	12	LOTC 1960-79 history quiz and discussion Final project – model construction
	12	Catch-up Day or … TBA
	13	LOTC 1980-99 history quiz and discussion Finish Final Project, (wouldn't that be nice) – model construction
	14	**Last Lecture**.
	14	**Critique of the Final project.**
	15	Final Exam – Ideation exercises

Material and Supplies

All materials can be found at WMU Bookstore, Bernhard Center

The intention of this class is to work without CAD or 3D-Printing. You need to learn how to think and solve problems without the limitations of a computer program. What do you WANT something to look like NOT what you can create based on the constraints of the program or your skill with the program.

Please note the instructions given by the Professor in class!
Round One – have by the second week.

Some of these you may have. Some you can scrounge. Some you may have to buy. I will keep it simple...

1. **Drawing Tool** – ANYTHING you like to use - Pencils, Pen, Felt Pens and/or Prismacolor or similar pencils. Something to put ideas on paper. Tablet Computer? Maybe the time has come.
2. **Paper** - This can be the most basic blank paper from your printer or a favorite pad. Basic paper will be supplied in class.
3. **System to keep sketches organized** - A simple folder will work. A bound sketchbook is better. This is a basic professional habit.
4. **X-acto #1 or other fine "art" knife**. Many variations of the basic knife exist from simple metals barrel to retractable. Break-off blade knife is good. Utility or construction knife is hard to work with.
5. **18" or 24" ruler, metal or metal edge!** (24" is better.)
6. **Cutting surface**. This can be the back of a drawing pad or a piece of mat board or cardboard. There will be some scraps available. Plastic cutting mats are very nice but a little expensive. You will want a plastic mat if you continue as a product designer.
7. Glue stick – purple disappearing type is best. UHU glue is superior.

Highly Recommended we have some to share.

8. **Glue Gun, Low or Dual temperature**. (Hot glue sticks provided.) There *may* be glue guns available for use in the studio. Your own glue gun will make life much easier. I consider standard glue stick size to be better than the mini-stick. A low temperature or dual temperature gun is best. Go find Gales True Value Hardware store just west of campus on Stadium Dr. at Rambling Rd. Hobby Lobby has had the best selection recently.

Your ideas

9. Other modeling items you have learned to use. Please share.

Expectation of the Students

1. Start developing your professional attitude. This is a professional degree program you are attending. Your ID professors take this very seriously.
2. You are expected to participate - share thoughts, ideas and questions in class. This is critical to help you shape your own thoughts and philosophy of design and therefore your career.
3. Ask questions. Ask for clarification. Teachers enjoy getting into the fine little details.
4. Material given to you to be read will need to be read. If something is not clear - ask If you do not ask I will assume you are perfect and can finish all projects and the final next week.

Requirements

Attendance-Attitude-Participation ...	10%
DOET & LOTC Quizzes	20%
Project 1.....	15%
Project 2.....	15%
Project 3.....	20%
Final, Ideation and sketching.....	20%
Total Points	100%

Final expectation –
Pick Up Your Own Trash and put it in the recycle bin or the waste can. I will lower the grade of a student who leaves cans, papers or other trash.

Grading Scale

3.75 – 4.0	= A	1.75 – 2.24	=	C
3.25 – 3.74	= BA	1.25 – 1.74	=	DC
2.75 – 3.24	= B	0.75 – 1.24	=	D
2.25 – 2.74	= CB	0.00 – 0.74	=	E

Grading Criteria

A. Always turns in outstanding work that goes beyond the requirements. Sets a standard that can be used as a mark for other students to shoot for. All work submitted on time.

B. Turns in consistently good work; but knowledge and skills are not fully developed; should do quite well in the field. All work submitted on time.

C. Average level of competence; describes the ability and performance level of the majority of students who are neither above nor below the average. Most likely will be adequate in the field. Usually turns work in on time.

D. Constantly below average; should probably consider changing majors. Seldom meets deadlines.

E. Very poor work; no hope for a future in the field. Does not meet deadlines of perform assignments.

Attendance

(Skip your job – loose pay. Skip class – loose grade.)

You have **one, (1 – uno, ein, en)** free absence. 5% of your total possible grade or .2 points will be deducted for each additional unexcused absence. A 4.0 is lowered to 3.8, a 3.25 becomes 3.15 etc. University officially excused absences will; of course, be excused. We are very serious about missed classes. If there is a problem or you need to be gone, tell me. Silence does not work.

THINK! If you are sick, stay home. Be a responsible adult. Being sick is an excused absence. This is especially true for flu symptoms. Follow the university health policy. Send me an e-mail what is happening.

Student Code

(It is amazing that this has to be in the syllabus!)

You are responsible for making yourself aware of and understanding the policies and procedures in the Undergraduate or Graduate Catalog that pertain to Academic Integrity. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct, (Judicial Affairs). You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with me if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.

A web based copy of the student code can be found at http://www.wmich.edu/conduct/docs/WMU_studentcode.pdf