

Exact dates and topics subject to change

Current version always on Blackboard

BOLD- Team Project Assignments

Session	DATE	Topic	Class activity	Assignment	Hand-in
1	M Sep 2	Introduction to course, the design process, where do new products come from?	Exercise in ideation- dry run: how to weigh your head	Dorm Poster	
2	W Sep 9	SCAMPER Project List	SCAMPER on skateboard, dishwasher		
3	M Sep 14	Finish SCAMPER Engineering Design Process Why Vote?		SCAMPER list for dishwasher	Dorm Drawing Skateboard
4	W Sep 16	Prototyping	Present SCAMPER DW in class Choose Project, BREAK INTO TEAMS	Select project and write problem definition.	SCAMPER list for dishwasher
5	M Sep 21	Reverse Engineering Working with cardboard	Team project Problem Definition SCAMPER project	SCAMPER project Choose critical uncertainty	Project Definition Draft
6	W Sep 23	Sheet Metal and Machining	Present SCAMPER for project Determine Critical Path	Morph/Pugh charts- CU and soft prototypes	Final Project Definition+ SCAMPER
7	M Sep 28	Mechanisms I	Acne Pen		
8	W Sep 30	Mechanisms II	CU Readout		Morph/Pugh Critical Path

BOLD INDIVIDUAL ASSIGNMENT

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Sessi on	Date	Topic	Class activity	Assignment	Hand-in
9	M Oct 5	CREO 4 BAR		4 Bar assignment	
10	W Oct 7	Materials Selection	Demo Soft Prototypes		
11	T Oct 13	Form as a Material (Substitute Monday)		James Bond	
12	W Oct 14	Adhesives			
13	M Oct 19		Critical Uncertainty Demos	3D cord organizer	
14	W Oct 21	Injection Molding, 3D printing Competitive analysis		Cord organizer Competitive Analysis	
15	M Oct 26	Gibbscam Costing		Calculate manufacturing cost of one or two parts in final project Whistle movie	4 Bar assignment
16	W Oct 28	Good vs Bad Design Overview CREO mechanisms II Gears and Belts, more 4Bar			James Bond
17	M Nov 2	CREO structures Report Guidelines			

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Sess ion	DATE	Topic	Class activity	Assignment	Hand-in
18	W Nov 4	Arduino I			Calculate manufacturing cost of one or two parts in final project
19	M Nov 9	Arduino II		Vernier	4-bar mechanism Cord organizer
20	W Nov 11	Competitive Analysis Presentations			Competitive Analysis
21	M Nov 16	Design for Manufacturing Engineering Deep Dive		Engineering Deep Dive	Whistle movie
22	W Nov 18	Practical Quality Control M&M QC Experiment James Bond Solution			Prototyping Plan
23	M Nov 23	MIGHT BE COVID CANCELLED Planning for Retirement 4 bar Assignment Feedback			
Thanksgiving Break					
24	M Nov 30	Thermal properties	Engineering Deep Dive Design Presentations		Engineering Deep Dive Design

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Session	DATE	Topic	Class activity	Assignment	Hand-in
25	W Dec 2	CREO Thermal analysis			
26	M Dec 7	Intellectual Property- the short version Course evaluations			
27	W Dec 9	Project presentation in class	Chance to incorporate project feedback into final report		Final project report submitted- paper and online

General Rules

1. This is a practicum class- attendance is mandatory, including zoom.
2. Cheating is unacceptable and will be treated accordingly
3. We employ a range of homework and project styles- some will play to your strengths, others will be easy or challenging.
4. Note every assignment is graded.
5. Learning outcomes- how to imagine a new product, optimize form and function, prototype and document your design
6. Secondary outcomes- teamwork (normally more important, but Covid), EPIC skills, appreciation of product realization metrics
7. Most lectures will be recorded and posted within a day of class
8. If the class is held in person, all personal and community safety rules MUST be followed or you will be asked to leave.
9. No final, but large report and presentation
10. Syllabus is only a guide- we will adjust in real-time based on class progress, Covid, stuff, ...
11. First lecture contains other guidelines