ME 360A1 S21 v1.1 Prof Blonder

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 Jan 25	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 Jan 27	SCAMPER Project List	SCAMPER on skateboard, dishwasher	SCAMPER list for dishwasher	Dorm Drawing
3	M Feb 1	Finish SCAMPER Engineering Design Process			SCAMPER list for dishwasher
4	W Feb 2	Prototyping	Present SCAMPER DW in class Choose Project, BREAK INTO TEAMS	Select project and write problem definition.	
5	M Feb 8	Reverse Engineering Working with cardboard	Team project Problem Definition SCAMPER project	SCAMPER project Choose critical uncertainty	Project Definition Draft
6	W Feb 10	Sheet Metal and Machining	Present SCAMPER for project Determine Critical Path	Morph/Pugh charts- CU and soft prototypes	Final Project Definition+ SCAMPER
7	T Feb 16	Mechanisms I (substitute Monday)	Acne Pen		
8	W Feb 17	Mechanisms II	CU Readout		Morph/Pugh Critical Path

BOLD INDIVIDUAL ASSIGNMENT

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Session	Date	Topic	Class activity	Assignment	Hand-in
9	M Feb 22	CREO 4 BAR		**4 Bar assignment**	
10	W Feb 24	Materials Selection	Demo Soft Prototypes		
11	T Mar 1	Form as a Material		**James Bond**	
12	W Mar 3	Adhesives			
13	M Mar 8		Critical Uncertainty Demos	**3D cord organizer**	
14	W Mar 10	Injection Molding, 3D printing Competitive analysis		Cord organizer Competitive Analysis	
15	M Mar 15	Costing CREO mechanisms II Gears and Belts, more 4Bar		Calculate manufacturing cost of one or two parts in final project **Whistle movie**	**4 Bar assignment**
16	W Mar 17	Gibbscam			**James Bond**
17	M Mar 22	CREO structures Good vs Bad Design Overview **Report Guidelines**			

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Session	DATE	Topic	Class activity	Assignment	Hand-in
18	W Mar 24	Arduino I			Calculate manufacturing cost of one or two parts in final project
19	M Mar 29	Arduino II- practice	Goals McGyver	Vernier	**Cord organizer** **Goals**
20	W Mar 31	Competitive Analysis Presentations 4 bar solution			Competitive Analysis
21	M Apr 5	Design for Manufacturing Demo McGyver Arduino solution		Engineering Deep Dive	**Whistle movie**
22	W Apr 7	Practical Quality Control ~~M&M QC Experiment~~ James Bond Solution			
23	M Apr 12	Planning for Retirement Good vs Bad Design Team Check-In			
24	W Apr 14	Thermal properties	Engineering Deep Dive		

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Session	DATE	Topic	Class activity	Assignment	Hand-in
25	W Apr 21	CREO Thermal analysis			
26	M Apr 26	Intellectual Property- the short version Course evaluations			
27	W Apr 27	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