## SYLLABUS

Course Number and Name:	ME691 – Advanced Product Design & Development
Term:	Fall 2023
Lecture:	Monday/Wednesday, EPC B05, 2:30-4:15
Lab:	EPC B05
Credits:	4. Engineering topic.
Number of Contact Hours:	LAB – 1, LECTURE – 3
Instructor or Coordinator:	Stephen Chomyszak
Office Hours:	By Appointment

Textbook(s) and/or Other Required Material: None

**Course Description:** This course is part one of a two course sequence (ME691 & ME692). Its aim is to introduce the student to the upfront efforts of Product Design (MRD, PRD, Product Specifications) through to the generation of initial concepts, down selection, and final detailing including CAD models, BOMs, and fully dimensioned production drawings and assembly instructions. The class will be segmented into teams of 3 to 4 people. Each team will navigate the above facets of the Product Development and Design process while working on a project of the team's choice and approved by the instructor. There will be engineering/design reviews at various stages of the project which will require each team to prepare and deliver concise and succinct presentations. Teams will incorporate feedback from each review back into their projects. Teams will also learn the basics of project planning and the importance of identifying and addressing high risk issues early in the process. ME692 will be used to build working models and prototypes of the final concepts.

Semester Schedule:

Seq#	Topics	Due Date
1	Introduction, Form Teams, Brainstorm Projects	
2	Present Project Ideas to Class for final vote	Wed, 13.Sep, 2023
3	Define customer and market using meetings, interviews, surveys, market reports	
4	Summarize customer profile, determine product features and specs	Wed 27.Sep, 2023
5	Generate product concepts and evaluate against customer requirements	
6	Present best product concepts for review and feedback by the class	Wed, 11.Oct, 2023
	Provide context about the customer, their needs, and how you have addressed	
	those needs with your concept	
8	Concept Mockups (laser cutter, waterjet, 3D Print, sew, foamcore)	Wed, 25.Oct, 2023
9	Present mockups to class for input and critique	
10	High level CAD layout – Product architecture and U/X	Wed, 8.Nov, 2023
11	Present layout to class for architectural and U/X critique	
12	Material choices, Detailed CAD, Manufacturing Review	
13	Final Mfg Drawings, BOM, Assembly SOP's	
14	Final Exam	Finals Week
NOTE:	Instructor reserves the right to make alterations to the above as needed.	

## **Assignments and Grading Criteria**

This course will be comprised of team-based work. Evaluation of team-based work will be comprised of a final team grade given by the instructor for the overall quality of the work produced by the entire team AND will be prorated based upon a peer evaluation of each member's contribution to the team by all other members on the team. The peer evaluation will be agreed to and signed by all members on the team and will be used in the determination of an individual's grade and evaluation.

The breakdown for the grade weighting is:

Attendance	10%
Semester Project	90%

Due to the importance of the team project, failure to participate in the project will result in a failing grade for the course.

## **Attendance Policy:**

All students are expected to attend all lectures, and events scheduled by their respective team. I will be taking attendance at lectures, and I encourage team leaders to take attendance at their team meetings to provide meaningful data during the team's peer assessment. Tracking of attendance will take the following format on a spreadsheet:

1 = Student is present and accounted for during scheduled class/lab time

0.5 = Student is not present but was proactive in communicating their absence to me via email

0 = Student not present and no prior notification given

A series of three 0's in a row will constitute a contact to the Department Chair to investigate the circumstances behind extended absences and to determine any administrative actions that should be taken as a result of the findings.

You can ask to see your attendance record for the class at any time.

## Academic Conduct:

All students will be expected to follow Boston University's code for academic conduct found here: <u>https://www.bu.edu/academics/policies/academic-conduct-code/</u>.

Here's the long and short of my expectations:

- 1. Don't cheat!
- 2. Be helpful to your teammates.
- 3. Come to classes and labs on time.
- 4. Give credit where credit is due.
- 5. Observe good safety practices when you are in EPIC.
- 6. Be prepared to play hard, work harder, and learn a lot of useful stuff.
- 7. Feel free to ask lots of questions when the need arises.
- 8. Learn from your mistakes and persevere until you achieve success.
- 9. Think about how your work can be represented in your engineering portfolio.
- 10. Don't hesitate to email me if you want to meet with me: <u>schomysz@bu.edu</u>

You are required to pass the EPIC safety quiz (<u>https://www.bu.edu/epic/get-started/safety-guiz/</u>) prior to using the equipment in EPIC.