

SYLLABUS

Course Number and Name: ME537 – Product Realization
Term: Spring 2025
Lecture: Tues/Thurs, 9:00-10:45, EPC 105
Lab: Tues/Thurs 11:15-12:05, EPC B05
Credits: 4. Engineering topic.
Number of Contact Hours: LAB – 1, LECTURE – 4
Instructor or Coordinator: Stephen Chomyszak
Office Hours: By Appointment
Textbook(s) and/or Other Required Material: Product Realization: Going from One to A Million, Anna C. Thornton, ISBN: 978-1-119-64953-3

Course Description: This course focuses on the essential and challenging process of getting a design from the drawing board into the hands of a customer. Cases are drawn from a range of industries, technologies and development speeds (everything from hardware startups to aircraft). It includes topics such as Design for Manufacturing, validation testing, cash flow modeling, in-house vs outsourcing, setting up a factory, selecting supplier partners, distribution, and ongoing product support. There will be a semester long project to build and prototype a small production system.

Semester Schedule:

Week	Topics
1	Introduction, Formation of Teams, Brainstorm Project Ideas.
2	Select Final Projects, Begin user research
3	Pilot Processes, Project Management, Manufacturing Methods
4	Product Definition and Specifications – What does the customer want?
5	Product Prototype Review and Class Critique
6	Packaging design – materials, printing, shipping
7	Flex Day – Final push on EVT Prototypes
8	SPRING BREAK – No Classes – But keep working anyways.
9	EVT Prototypes Due, Class Critique, Developing Quality Test Plans
10	Fixed Costs, Variable Costs, Types of Profit, Cash Flow
11	DFX – Design for Manufacturing/Assembly
12	DVT Prototypes Due, Class Critique, Process Design, Tooling
13	Production Quality, Supply Chain, Production Planning
14	Distribution, Certifications and Labeling, Customer Support, Mass Production
15	PVT Prototypes due, Class Critique, Mass Production proposals due.

NOTE: Instructor reserves the right to make alterations to the above schedule as needed.

Assignments and Grading Criteria

This course will be comprised of individual and 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 team-based evaluation.

In addition to building numerous prototypes to simulate the areas of the pilot production process, each team must maintain a series of 19 different documents throughout the semester. The introduction of the documents is phased throughout the semester but each document is a living document and must be updated as the assignments progress. These documents are common to the product design and realization process in many industries. Of equal importance to the quality of the engineering, design and manufacturing of a product is the level and quality of the documentation which is created and maintained throughout the entire process of bringing a product from prototype form to a consumer grade form.

The breakdown for the grade weighting is:

Attendance	10%
Documentation	30%
EVT, DVT & PVT Prototypes	30%
Mass Production Plan	30%

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 lecture, labs, and events scheduled by their respective team. I will be taking attendance at all lectures and labs 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:

1.0 = 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

0.0 = 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.

I will be providing continuous input and feedback on your work throughout the semester and challenging your decisions in terms of the customer experience, the function of your product, the aesthetics of your product, the materials chosen for the prototype, and the methods used to make components for the prototype. Be prepared to justify your decisions.

Academic Conduct:

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