



Carnegie Mellon University  
Master of  
Software Engineering

## 17-692: Product Management Essentials

Fall 2024, 6 Units

### Instructor

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### Office and Office Hours

300 S. Craig St. #275 or Zoom  
By appointment

**Course Description.** This course prepares students to understand and use essential product management concepts and practices of product innovation. This 6-unit course emphasizes learning-by-doing to achieve the learning objectives. Students will work individually on a hands-on, course-long project focused on a problem space selected by the student and approved by the instructor for course fit.

Students will acquire customer-centric thinking skills to compose a well-defined, worthwhile customer problem to solve; to generate and specify an innovative product solution concept; to design, price and quantify a compelling and differentiated customer value proposition. These skills are used in the early stage of every new product or service idea.

**Prior Knowledge.** It is beneficial, but not required, for students to have taken an introductory course or have experience in one of the following: business, strategy, marketing, product design, product development, innovation, or entrepreneurship. Most important is a desire to learn product management and to use critical thinking.

**Learning Objectives.** By the end of this course, students will be able to:

- Identify and recognize essential concepts used in conceiving, describing, and planning new product ideas
- Use the whole problem framework to compose a well-defined customer problem.
- Apply solutioning techniques to generate product ideas, define a product concept from multiple viewpoints, and identify product requirements.
- Apply value-centric concepts to design, price and quantify a customer value proposition that customers find compelling and justifiable to buy/use a product idea.
- Use the customer perspective to analyze competition for positioning opportunities.
- Make market and product focus decisions.

**Learning Resources.** You'll be provided with the class slides, examples, papers written by the instructor, and other papers and articles. Each of these published items are accessible within the course assignments on Canvas.

**Technology Resources.** In this course, we will use several technologies:

- Canvas – Our course Canvas site will be the central place for your assignments, learning materials, and the class slides. Make sure you are setup to receive notifications of announcements and of new and changed assignments.
- Slack – Our course’s slack channel will be used to communicate and answer questions about the course.
- OLI platform – Specific learning activities have been prepared using CMU’s Open Learning Initiative (OLI) software platform. These activities feature low-stake exercises in the form of multiple choice, true/false, multiple answers, and other similar types.
- Google Suite – We’ll use Google Docs and Forms for you to complete various tasks during some course learning activities.

**Assignments and Assessments.** Student’s knowledge, comprehension and application skills will be assessed in the following ways:

- **Product Assignments (85%).** There are 6 Product Assignments that students will complete during the course. Each one builds upon the student’s work in the previous Product Assignment and culminates in an innovative product idea that offers compelling value to customers. It’s an opportunity to apply the product management concepts explained in the course to a student’s chosen and approved customer problem space.

You need to submit your work on-time to receive full credit. If the assignment is submitted late, students will lose 1 point per day measured by the start for each 24-hour period from the deadline.

Each student is given a 48-hour grace period for ONE Product Assignment, except the last one (No. 6,) for which this lateness penalty will not be applied. There will be no further lateness exceptions on Product Assignments.

- **Learning Activities (10%).** Each week, students are to complete the assigned readings and/or video lessons. Many Learning Activities have exercises to further develop their understanding of the concepts. The exercises are organized by module on the OLI platform. They are in the form of multiple choice, short answer, true/false, and matching questions.
  - Each module has multiple exercises.
  - Students may make multiple attempts to complete an exercise correctly.
  - Students will receive:
    - full credit (1 point) for completing all exercises in a module correctly by the due date
    - **no credit (0 points)** for not completing all exercises in a module correctly by the due date.
    - There will be no exceptions for lateness or incomplete work.

- **Peer Learning Activity (5%.)** There is a 2-part Peer Learning Activity where each student will engage in learning from an assigned group of their peers. Each student will share their customer problem statement with their peers in the group for Part 1. Each other student in the group will provide solution idea suggestions to their peers' work for Part 2.
  - LATENESS: You will receive NO points for each part that is not complete and submitted by the deadline. There will be no late exceptions for this. Your peer group members depend upon you to do your part by the deadline so they can complete their work by the deadlines.

Attending each class session is expected but not required.

### Grading System.

Activity	Final Grade (Points = %)
Learning Activities (OLI exercises)	10
Peer Learning Activity	5
Product Assignment 1	5
Product Assignment 2	20
Product Assignment 3	15
Product Assignment 4	15
Product Assignment 5	15
Product Assignment 6	15
TOTAL	100 points

Grade	Percentage Interval
A+, A, A-	97-100%, 93-96%, 90-92%
B+, B, B-	87-89%, 83-86%, 80-82%
C	70-79%
D	60-69%
R (F)	59% or below

**Course Schedule at a Glance.** The following schedule provides a general overview of topics and schedule of the Product Assignments and Peer Learning Assignments. Please refer to the syllabus online in Canvas for all assignments including online exercises (OLI) and the specifics about each class topic.

Week	Date	Class	Topic	Product and Peer Learning Assignments
1	January 17	1	Course Overview. Introduction to Product Management and Product Success	
2	January 22	2	Customer Problem Space – Part 1: Problem Space Framework, Customer Concept and Actors, Job To Be Done	<b>Product Assignment 1 (5 points):</b> problem space candidates <b>Due January 26</b>
	January 24	3	Customer Problem Space – Part 2: Use Cases, Customer Journey Mapping, Problem Space Reframing	
3	January 29	4	Customer Problem Space – Part 3: Outcomes, Problems and Problem Sizing	<b>Product Assignment 2 (20 points):</b> Customer problem space analysis and communication <b>Due February 5</b>
	January 31	5	Customer Problem Space – Part 4: Problem Selection, Causes and Communication	
4	February 5	6	Market Space – part 1: Market segmentation, sizing, selection	<b>Peer Learning Activity Part 1 (2.5 points)</b> Share customer problem statement. <b>Due February 9</b>  <b>Product Assignment 3 (15 points):</b> Market and competition <b>Due February 12</b>
	February 7	7	Market Space – part 2: Market entry and Competition	
5	February 12	8	Solution Space – part 1: Focus Decisions, Idea Generation, Idea Description and Product Category	<b>Peer Learning Activity Part 2 (2.5 points)</b> Share solution idea suggestions.  <b>Product Assignment 4 (15 points):</b> Focus decisions, product idea, requirements, and user views. <b>Due February 19</b>
	February 14	9	Solution Space – part 2: Functional Requirements and User Views	
6	February 19	10	Solution Space – part 3: Non-functional requirements and other concept views	<b>Product Assignment 5 (15 points):</b> Non-functional requirements, views, and features-benefits. <b>Due February 26</b>
	February 21	11	Customer Value Space – part 1: Customer Value, Features and Benefits	
7	February 26	12	Customer Value Space – part 2: Value-Based Pricing and Total Addressable Market	<b>Product Assignment 6 (15 points):</b> Pricing, Total Addressable Market, Customer Justification, and Product Narrative <b>Due March 2</b>
	February 28	13	Customer Value Space – part 3. Customer Costs, Customer Justification. Product Narrative.	

**Accommodations for Students Disabilities.** If you have a disability and have an accommodations letter form the Disability Resources office, I encourage you to discuss your accommodations and needs with me as early in the semester as possible. I will work with you to ensure that accommodations are provided as appropriate. If you suspect that you may have a disability and would benefit from accommodations but are not yet registered with the Office of Disability Resources, I encourage you to contact them at [access@andrew.cmu.edu](mailto:access@andrew.cmu.edu).

**Academic Integrity.** Honesty and transparency are important to good scholarship. Plagiarism and cheating, however, are serious academic offenses with serious consequences. If you are discovered engaging in either behavior in this course, you will earn a failing grade on the assignment in question, and further disciplinary action may be taken.

For a clear description of what counts as plagiarism, cheating, and/or the use of unauthorized sources, please see the [University's Policy on Academic Integrity](#).

If you have any questions regarding plagiarism or cheating, please ask me as soon as possible to avoid any misunderstandings. For more information about Carnegie Mellon's standards with respect to academic integrity, you can also check out the [Office of Community Standards & Integrity](#) website.

**Student Wellness.** As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. CMU services are available, and treatment does work. You can learn more about confidential mental health services available on campus at the [Counseling and Psychological Services](#) website. Support is always available (24/7) from Counseling and Psychological Services: 412-268-2922.

**Respect for Diversity.** It is my intent that students from all diverse backgrounds and perspective be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know if any of our class meetings conflict with your religious observations so that I can make alternate arrangements for you.