Course Description — ESTM 60238 — Fall 2026
Product Market Fit

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Please read this carefully so you understand what the course is trying to convey, the assignment that makes up the courses, and the ground rules under which we will operate.

CLASS DESCRIPTION

The premise of this course is that the success of a startup (and even a large company launching a new product) is most dependent on finding a market that is desperate for its product. Focusing on product/market fit conflicts with the conventional view that a startup's limited resources should be applied to perfecting the execution of day-to-day activities. Interestingly almost every successful product driven technology company followed a similar path to find its product/market fit, but it was usually by accident. In this course we attempt to define the consistent process each successful company pursued, which in most cases is highly counterintuitive, and discuss how to apply it to different situations.

Our class highlights the potential conflict between pursuing a conventional approach and prioritizing optimizing product/market fit. To surface this conflict, we employ a seminar format so every issue can be evaluated in detail. Our lessons are limited to information technology-based companies, but we have been told they may be more broadly applicable. That being said, this course has been designed for someone who is truly interested in technology-based entrepreneurship or investment.

This class requires an unusual amount of work in and out of class. Specifically, you will be expected to:

1. Study readings and cases as well as watch videos
2. Prepare written assignments for each class
3. Participate in class discussion
4. Deliver a final project

TEXTS, READINGS AND WORKLOAD

Students who choose to take this course must read all the assigned articles and books to have the proper foundation to address the frequent counterintuitive learnings. In some cases that might require an entire (although relatively short) book be read for an individual class. A written assignment addressing at least one of the learnings from each reading will be required to be submitted at least four hours prior to each class. **Failure to submit even one of the written assignments will result in expulsion from the class.** In addition to the daily written assignments, there will be a large individual project required at the end of the course. In other words, this course requires a far larger time commitment than a typical ND course, especially for one that offers only 1.5 credits. However, I promise this course will be invaluable should you choose an operating or investment career in the technology business.

A case study will only be used for two of our 12 classes. Often the assigned readings come from the following books:

<u>The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses</u>
Author: Eric Reis
Publisher: Crown Business
ISBN: 978-0307887894

<u>Crossing the Chasm, 3rd Edition: Marketing and Selling Disruptive Products to Mainstream Customers</u>
Author: Geoffrey A. Moore
Publisher: Harper Business
ISBN: 978-0062353948

The Mom Test: How to talk to customers and learn if your business is a good idea when everyone is lying to you.
Author: Rob Fitzpatrick
Publisher: Founder Centric
ISBN: 9781492180746

Inside the Tornado
Author: Geoffrey Moore
Publisher: HarperBusiness (Collins Business Essentials), December 2004
ISBN: 978-0-06-074581-3 (paperback); 978-0-06-180863-0 (ebook)

Sprint: How to Solve Big Problems and Test New Ideas in Just Five Days
Author: Jake Knapp
Publisher: Simon & Schuster
ISBN: 978-1501121746

The Road to Character
Author: David Brooks
Publisher: Random House
ISBN: 978-0812983418

In addition you will be required to read the following articles in order to successfully complete your weekly assignments.

1. Howard Marks., "The Value of Predictions, or Where'd All This Rain Come From?" *Financial Analyst Journal*, Nov - Dec 1993, p. 6-8
2. Everyone Pivots by Andy Rachleff (available on LinkedIn)
3. Unusual Ventures article on Market Sizing TAM/SAM/SOM (available on LinkedIn)
4. Marks, H.S., "You bet!", Oaktree Capital
5. Leslie, M., and Holloway, C. A., "The Sales Learning Curve," Harvard Business Review, July 2006, Reprint R0512D

6. Vohra, R., "How Superhuman Built an Engine to Find Product/Market Fit", The First Round Review

CLASS DISCUSSION

The course will rely on class discussion of the readings to convey a large part of the learnings. Questions we plan on raising in class are included in each class assignment. Regular participation in a study group is recommended.

My experience is our discussion is often improved if we bring in a variety of opinions by calling on people other than those who volunteer. While you are expected to be an active participant throughout the semester, please note that the frequency (i.e., the quantity) of your contributions in class is not the only criterion for effective class participation. It is the quality of your participation that is most important. Criteria that are useful in measuring effective class participation include:

1. Is the participant a good listener?
2. Are the points that are made relevant to the discussion? Are they linked to the comments of others?
3. Do the comments show evidence of the analysis of the case and an understanding of the assigned readings?
4. Is there willingness to test new ideas or are all comments "safe" (for example, repetition of case or reading facts without analysis and conclusions)?
5. Do comments lead to a clearer statement of the concepts being covered and the problems being addressed?

I would like to emphasize four points:

1. When participating, please focus on the *logic* of your argument rather than examples to make your argument, as examples might represent outliers.
2. Well posed questions are not only a legitimate way to interact, but should be an important part of the discussions.
3. In most of the topics we discuss, there will be many different actions and plans that could be undertaken. Enlightened debate about the best plan to implement adds significantly to the understanding of the issues.

4. Because of the varied backgrounds in the class, many of you will have important contributions to make based on your personal experience. I will try to learn about your backgrounds over the course of the term, but you are encouraged to bring these experiences to bear on the analysis of the cases.

READINGS

Please do the readings in the order in which they are assigned, and you need to do all the readings assigned for each class if you want to get the full value of the lesson for that class.

DAILY WRITTEN ASSIGNMENTS

For each class you are required to prepare a brief written assignment that addresses a question that can only be answered if you have done the readings. **It is important that you reference points made in the readings to support your point.** Please focus on the logic of your argument rather than examples to make your argument as examples might represent outliers. Please do not submit more than **two** single-spaced, 12 point font based pages and make sure to write your name on the first page. **You are required to submit your answers to Canvas no later than 9pm ET the day before the class.** I will use the responses to these assignments to tailor the lessons I teach in class. Failure to submit even one of these assignments will result in immediate expulsion from the class. Because the lessons of the course are so counterintuitive, the use of ChatGPT or Claude will lead to an incorrect answer in all the written assignments. I require the extra work of daily written assignments because the counterintuitive lessons taught in this class will not make sense without the context provided by the readings.

FINAL PROJECT

Based on learnings from this course, please define an explicit process you would implement if you were the Head of Product at a new startup company to ensure that the product you choose to develop has the highest possible chance of success. You may assume you work for an enterprise software or consumer company. The process should start after you have developed an insight and end when you are either ready to test growth hypotheses or stop further development on the product. This project must be pursued on your own and should not exceed five single-spaced, 12 point font based pages**. The paper is required to be submitted to Canvas no later than 5pm ET on November 12, 2026.**

Guidelines for the final paper:

1. No exceptions will be made for any of the requirements listed above.
2. Your name should appear on the first page of the paper in the upper right-hand corner.
3. Additional graphics or flow charts are welcome, but not necessary, and do not count against the page limit.
4. Assignments turned in the day of, but following the end of our final class session, will have their grade reduced by one full grade. Papers turned in following that day will be penalized an additional full grade for each subsequent day overdue.

General criteria for evaluation of the research paper

1. The completeness of your proposal.
2. The ability to relate and cite concepts discussed in class and in the readings.
3. The clarity and organization of the presentation and the cogency of the arguments.

GRADING

Your course grade will be based on class participation, your written assignments and the final project, which will be weighted approximately as follows:

Class participation	60%
Daily written assignments	20%
Final Project	20%

COURSE OPERATIONS

Because every faculty member has somewhat different expectations as to class operations and norms for individual behavior, I would like to outline a few of mine at the outset:

1. Non-participation in class is grounds for an Unsatisfactory grade, independent of the quality of one's written assignments and final project.
2. Phones, PCs, and tablets are not permitted to maintain full concentration in class.
3. **Enrolled students who miss the first day of class will be dropped from the class.** Also, only waitlisted students who attend the first class will be allowed in.
4. Students arriving late will not be allowed to attend class and will be counted as an unexcused absence.
5. I understand that other demands may require you to miss a class, but you should not plan on having more than one absence during the quarter. More than one absence will affect your grade and each subsequent absence will have an increasing negative effect. More than two absences will be grounds for an Unsatisfactory grade.
6. To receive credit for this class, you cannot miss more than two of the 12 sessions. If you must miss more than two classes due to excused absences such as because you are sick, please drop the class.
7. Please let me and our TAs know in advance via email if you must miss a class.
8. I plan to be prepared for every class and expect you to be as well. Because I frequently call on individuals whose hands are not raised, you should let me know before class if an emergency has made it impossible for you to be prepared adequately for that class.
9. If you would like to speak with me outside of class, I ask that you try to give some thought to what you would like to discuss before we meet, so we can use our time efficiently. Obviously, you should never view a meeting outside of class as a substitute for class participation. Please email me at the address listed at the beginning of this document to schedule a meeting.

COURSE SCHEDULE

Session 1 – Friday, August 28, 2025 - Introduction to PMF Lab

READINGS
1. Marks, H.S., "The Value of Predictions, or Where'd All This Rain Come From?" *Financial Analyst Journal*, Nov - Dec 1993, p. 6-8

WRITTEN ASSIGNMENT
1. Why do you think we assigned the Marks article?
2. When creating a new tech business idea, should you start with a market, look for a big problem and develop a solution or start with a technology change that enables a new product and look for a market that needs it?

QUESTIONS TO PREPARE
1. What does it mean to be non-consensus?
2. Why is the idea of non-consensus important for a startup? For finding PMF?

Session 2 – Friday, September 04, 2026 - The Lean Startup Methodology

READINGS
1. Reis, E., The Lean Start Up, *Crown Business*, Chapters 1 – 3.

WRITTEN ASSIGNMENT
1. Does the order in which you prove your value and growth hypotheses matter?

QUESTIONS TO PREPARE
1. Why does Ries say to think like a scientist?
2. Can an experiment damage your brand if you don't succeed?

Session 3 – Friday, September 11, 2026 - Creating a Value Hypothesis.

READINGS
1. Reis, E., The Lean Start Up, *Crown Business*, Chapters 4 – 6.
2. Everyone Pivots (article)

WRITTEN ASSIGNMENT
1. What aspects of your Value Hypothesis are you likely to change? Why?

QUESTIONS TO PREPARE

1. If you have a startup idea you are working on, create a one page Value Hypothesis summary. If you don't have a startup idea, select your favorite startup product and create a one page value hypothesis summary.
2. What does it mean to Pivot?

Session 4 – Friday, September 18, 2026 - Picking the Who.

READINGS
1. Moore, G. A., Crossing the Chasm, *Collins Business Essentials 20*, Chapters 1-3

WRITTEN ASSIGNMENT
1. What is the Technology Adoption Lifecycle and why does it matter to a startup?

QUESTIONS TO PREPARE
1. What is required in order to cross the chasm?
2. How do you choose which market to start with?
3. On what dimensions can you segment a market for your Who hypothesis?
4. Would you expect everyone to like your idea if it were new and truly compelling?

Session 5 - Friday, September 25, 2026 - Customer Discovery

READINGS
1. Fitzpatrick, Rob., The Mom Test, Chapters 1-8.

WRITTEN ASSIGNMENT
1. What was the biggest mistake Rob made with his startup? Why? What should he have done differently?

QUESTIONS TO PREPARE
1. What's the best way to start a customer prospect call? Why?
2. What are some ways you know a customer prospect call went well and is worth pursuing a follow up call?
3. What are some ways you know a customer prospect call is a dead end?

Session 6 - Friday, October 02, 2026 - The How. Business Physics.

READINGS
1. Moore, Geoffrey., Inside the Tornado, Chapters 2-3.
2. Unusual Article on TAM/SAM/SOM

WRITTEN ASSIGNMENT

1. How does the Technology Adoption Lifecycle fit with the bowling alley metaphor?
2. Prepare a TAM/SAM/SOM analysis for your startup or a startup you like. What are some of the challenges you have when doing this analysis?

QUESTIONS TO PREPARE

1. What do investors mean when they talk about "business physics" when considering investing in a startup?
2. Is top-down market sizing better than bottom-up? Why or why not?
3. When assuming pricing for your solution, what are some important considerations?

Session 7 - Friday, October 09, 2026 - AppDynamics Case. Value Hypothesis Q&A.

READINGS

1. AppDynamics Case
2. Value Hypothesis Question List.

WRITTEN ASSIGNMENT

1. For volunteers who have a startup idea: 48 hours before class, in no more than two pages please write succinctly (we will share this with everyone in the class):
    a. What is the business of your startup? (make sure to give enough detail on this point for your classmates to be able to evaluate the quality of your value hypothesis)
    b. What technology inflection point do you leverage? (if you don't have one then don't make one up)
    c. What is the core value added of what you provide?
    d. What do you believe is your business's leap of faith assumption?
    e. Explain why you chose your initial target audience
    f. What is the most important metric to measure once you ship your MVP?

QUESTIONS TO PREPARE

1. What are the most critical questions to consider when evaluating a Value Hypothesis?.
2. Using those questions, be prepared to discuss how appropriate each submitted value hypothesis is to the business being started. Remember, we are not evaluating the businesses being proposed, just the value hypotheses.

Session 8 – Friday, October 16, 2026 - Validating a Value Hypothesis.

READINGS / VIDEO:

1. Reis, E., The Lean Startup, Crown Business, Chapter 7
2. Intuit's Scott Cook: The Boss Is No Longer The Caesar

3. Leslie, M., and Holloway, C. A., "The Sales Learning Curve," Harvard Business Review, July 2006, Reprint R0512D
4. Vohra, R., "How Superhuman Built an Engine to Find Product/Market Fit", The First Round Review

WRITTEN ASSIGNMENT

1. Is Sales Yield > 1 or Vohra's "How would you feel if you could no longer use the product?" minimum threshold of 40% a better objective proof of a value hypothesis? Please explain your logic.

QUESTIONS TO PREPARE

1. Can you create formal experiments for all hypotheses?
2. How would you best determine the level of a potential customer's desperation for what you intend to offer?
3. What heuristics other than Vohra's "how would you feel if you could no longer use the product" do you think best measure the quality of a consumer and enterprise business's product market fit?
4. How good is a design sprint likely to be at helping you find PMF relative to an MVP?

Session 9 - Friday, October 30, 2026 - Savoring the Surprise and Measuring PMF.

READINGS

1. Airbnb (GSB case E-470)
2. Cook, S. video on "savoring surprises"

WRITTEN ASSIGNMENT

1. How does the Marks article relate to finding product market fit?

QUESTIONS TO PREPARE

1. Why did Airbnb start by pursuing an event-based strategy? Was the cereal PR campaign a good experiment?
2. Did the Airbnb founders use a particular process to find success? Would you have recommended a different approach?
3. On which of their many opportunities should the founders focus their limited resources? How should they go about prioritizing?
4. What did Paul Graham mean by "sometimes it's necessary to do things that don't scale?"

Session 10 - Friday, November 6, 2026 - Distractions to Finding PMF

READINGS
1. Marks, H.S., "You bet!", Oaktree Capital

WRITTEN ASSIGNMENT
1. How does the Marks article relate to finding product market fit?

QUESTIONS TO PREPARE
1. What typical startup activities/initiatives**, outside ones we've discussed in class**, might be distractions to finding product/market fit?
2. What do you think are the most difficult distractions to ignore? Why?

Session 11 - Friday, November 13, 2026 - Summary of the Process and Class.

READINGS
1. None.

WRITTEN ASSIGNMENT
1. Final Paper: Product Process Project

QUESTIONS TO PREPARE
1. Be prepared to discuss the critical elements of your product process
2. What milestones discussed in this course do you think you need to be achieved to raise a Seed, Series A, B and C venture round?
3. Proof of which hypothesis, value or growth, is more likely to attract interest from angel and venture investors?

Session 12 - Friday, November 20, 2026 - Career Advice. Q&A.

READINGS
1. The Road to Character by David Brooks

WRITTEN ASSIGNMENT
1. Does the method you learned this term apply to a career? A life? Why or why not? Argue one side.

ACADEMIC INTEGRITY

All work must be original and properly attributed. The Notre Dame Honor Code applies: "As a member of the Notre Dame community, I will not participate in or tolerate academic dishonesty." Violations include:

- Submitting work not substantially your own
- Failing to cite sources appropriately
- Misrepresenting AI-generated content as original work
- Collaborating on individual assignments