

EGR 506 Managing New High-Tech Product Launches

Spring 2024 Online Class

*This course covers new high-tech product development and launch from the perspective of the technical product manager responsible for developing and launching new products and new lines of business within the high-tech firm. Topics cover entrepreneurship and “intrapreneurship”, product management, the entire spectrum of the new products development and launch process starting from concept generation, ideation, concept evaluation, and business case analysis all the way through market testing and product launch. A particular emphasis is placed on the planning and development of a new product for the student’s current employer. Students may also use this course to plan a new startup company if they are not currently employed. Each phase of the new products management process will be covered and illustrated by case studies. Life cycle product management will also be addressed. Students will generate a new product business plan as a course project. **3 credit hours.***

This course will be operated as an online asynchronous seminar course. The course covers a wide range of topics and here, they will be addressed through a series of lectures, readings, case studies, and business planning exercises. The course consists of 13 weekly modules. A detailed course schedule is provided in Moodle by Module with due dates posted next to each required assignment.

● Prerequisite

Graduate standing with an undergraduate technical degree.

● Course Topics

- Entrepreneurship, Intrapreneurship and Product Management
- New Products Planning and Development Process
- Lean Startup and Successive Prototyping
- Opportunity Identification/Selection and Business Case Analysis
- Market Analysis. Analysis of Competition.
- Disruption, Product Market Positioning
- Role of product with respect to corporate charter
- Concept Evaluation and Testing. Disruptive new products.
- Disruptive new-to-the-world products v. incremental improvements
- Market Research – market size, market trends, market behavior
- Conjoint analysis and product design to market need
- Competitive Analysis and Industry Analysis. Porter’s Five Forces.
- Sales Forecasting and Financial Modeling. Financial Analysis.
- Development Team Selection and Management. Cross Functional Teams.
- The Business Planning Process
- Components of the Business Plan
- Strategic Launch Planning. Test Markets. Beachhead.

- Launch Management and Market Testing
- Customer Service, Maintenance, Training, Help Desk
- Sources of Capital. Capital Raising. Venture Capital. Internal Capital.
- Growth planning and management
- Exit and succession planning

• Course Objectives

Upon completion of this course, students will:

- Understand the principal issues involved in technical product management throughout all phases of the product life cycle.
- Understand the role of the entrepreneur, the intrapreneur and the product manager
- Be able to develop, plan and manage with a product management plan that covers design, development, test, marketing and sales, and customer support.
- Be able to use strategic planning tools
- Develop skills in writing business plans and pitching them for capital and support
- Be skilled at participating in the development of a strategic plan that relates to organizational objectives for a product or product area including its phase out and replacement at the end of the product life cycle.
- Understand the relationship of supply chain issues and performance as it relates to the product manager's job and the entrepreneur's job
- Acquire skills at making persuasive presentations and raise capital
- Be aware of product liability issues, product warranties and their management and product recalls and their impact and management.
- Acquire basic financial management tools needed by product managers.
- Learn about the role of regulatory agencies and administrative law as it affects the provision of products to the marketplace.
- Become exposed to several markets through case studies including pharmaceutical, medical device, software, alternative energy products, electronics, telecommunications and entertainment products. Case studies will be used so that students can learn the similarities and differences impacting product management in different markets.

• Course Requirements

Expectations:

Your success in the class depends on a mix of learning from others and developing ideas and concepts of your own. The course requires learning from assigned readings, threaded discussions, and a term project to develop a product launch plan. Students are expected to complete reading assignments (available on the course website) before viewing the twice-weekly posted videos. You will need to provide a webcam and headset (earphones and microphone) to record your final presentation at the end of the course. You must complete the requirements under Grading below.

Grading:

Grades are a necessary part of earning a degree. That said, this is an elective course and we hope you are here to learn and have fun. Your grade is based on 5 deliverables, each weighted at 20% of your grade. The summarized grading criteria is stated below. However, a detailed rubric is posted with each assignment in Moodle.

Participation in Online Forums	20%	Based on quantity and quality of posts
Business Plan Proposal, Feasibility Analysis	20%	Based on creativity, depth, and feasibility
Financial Model of Proposed Product Business	20%	Based on completeness and realism
Pitch deck and Executive Summary	20%	Based on being complete, compelling, integrated
Presentation and Evaluation Exercise	20%	Based on how compelling the presentation is

● **Textbooks and Materials**

Required. The following book is required reading in the course as assigned by the course syllabus. Each week, specific details about the relative importance of the various topics will be posted through course announcements.

SUCCESSFUL BUSINESS PLAN: Secrets and Strategies, Rhonda Abrams, 7th Edition, 2019, The Planning Shop \$80

Abrams Electronic Financial Worksheets, \$44

<http://planningshop.com/shop/>

The total cost of all required materials for this course is approximately \$124)

References. The following are References for the course and are "NOT REQUIRED" to be purchased. However, students may want to review some of them in the library.

1. Engineering Your Start Up, by Leveraging the Horizon, by Ed Addison.
2. The Art of the Start, by Guy Kawasaki.
3. Product Management, by Haines.
4. Crossing the Chasm, by Geoffrey Moore.

5. The Lean Startup. Eric Ries. Penguin Random House, UK. 2011
6. The innovator's Solution, by Clayton Christensen

• **Computer and Internet Requirements, Platform**

NCSU and Engineering Online have recommended minimum specifications for computers. This course will be administered from Moodle and Panopto. Students should log in to Moodle for course modules, announcements, links to videos and other course activities.

• **Instructor**

Edwin R. Addison, Lecturer

Engineering Online and MEM Program

Office Hours: Virtual and Wednesday evenings

Mobile Phone: 910.398.1200

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Email preferred, text for emergencies

Course Modules

The calendar schedule for the modules and due dates are shown in Moodle.

MOD	TOPIC	READING	COURSE ACTIVITY	DATES
1	Introduction, Disruption	Christensen	Reading, Post Bio and Product Ideas Start forming teams, choosing products	1/8-1/14
2	Product Market Positioning	9, Notes	Discussion of Class Case Study: AI for Tumor Classification SWOT, Mission Statement, Product	1/16-1/22
3	The Lean Startup	Ries	Recorded Lecture, Reading Define Your MVP	1/22-1/29
4	Market Analysis	6-8	Discussion of Class Case Study Wellness Day 9/19 - 2-Week Module Workbook Chapters 7-8 (Abrams)	1/29-2/5
5	Feasibility Assessment	9, Notes	Business Plan Project Proposal Due See Workbook page 39 - Feasibility	2/5-2/12
6	Forecasting	16-17	Learn to Use Financial Software tool Refer to Ch-10. Prepare Draft Forecast.	2/12-2/19
7	Intro. To Business Planning	2-3, 5	Discussion of Business Plan Format Refer to forms Chs. 5,6,9,11,13,15	2/19-2/26
8	Business Planning, cont.	9-12, IV p 407	Discussion of Various Business Plans Draft Executive Summary	2/26-3/4
9	Management & Execution	13, 18, 20	Financial Forecast Due "LAB" Week, No Lecture	3/04-3/11
10	Product Launch Plan	Moore, Haines	Discuss Elements of Launch Plan Revisit Ch-10 in detail.	3/18-3/25
11	Financing	19, IV p 417	Participation Report Due	3/25-4/1
12	Growth and Exit	15	Pitch Deck and Executive Summary Due Two Week Period due to Thanksgiving	4/1-4/8
13	Business Plan Period 2 ½ Weeks	Kawasaki	Presentation and Evaluation Exercise Due	4/08-4/25

• Course Policies

Academic Integrity – Students must do their own work except where assignments are stated as group assignments. The University policy on academic integrity can be found in the **Code of Student Conduct(POL11.35.01)**, The Honor Pledge will be used upon submission of each assignment. It is expected that students will tests and assignments with honesty.

Late Assignments – Assignments must be submitted by the due date. Late assignments are penalized 10% and accepted up to one week late, but no assignment may be submitted after the end of the course. After 10 days, assignments are not accepted. No assignment may be submitted after the last day of class. If you have a valid excuse approved in advance based on business or family commitments, or illness, a grace period of up to 3 days may be granted. Assignments in Module 13 may not be late.

Exams – The midterm exam in this course are open book and notes. Neither the Internet (i.e. Google, nor other people, may be consulted during an exam. Exams must be completed during the specific time period in one single sitting subject to a time limit. The midterm exam is comprehensive, covering primarily the lectures and readings, but topics discussed in the forums are fair game.

Posting to Discussion Forums – Discussion forums (for online sections) are an important part of this course. The initial questions will be posted at the beginning of the week, but additional questions may be added at any time. These are intended to be conversations, not solo essays. You are not graded as if it was a homework assignment, but rather you are graded for your active contribution to an intelligent conversation. You need not be comprehensive in your posts. Instead, just keep the conversation flowing and post only one idea at a time. You cannot be engaged in a conversation by waiting until Sunday night and then doing all your posts at once. You should log in periodically between Wednesday and the end of the week. You are required to read everything that any student posts. It is expected that you spend two hours per week researching, reading and posting to the forum. You should make an initial post by Thursday, and at least two (and not more than three) follow up posts by Sunday, preferably with one of them posted before Sunday to keep the conversation flowing. The initial post should contain an illustration and references and be about two paragraphs long. The follow up posts should be conversational with your classmate.

Incomplete Grades. You may be given an Incomplete grade for the course if you were not able to finish for an unforeseen circumstance. This requires permission from the instructor by the end of Module 12. Incomplete grades must be made up within 30 days.