**BA in Management Program
Fall 2021-2022**

**MGMT 415 – Entrepreneurial Technology Commercialization**

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**Office Hours:** By appointment

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| --- | --- | --- | --- |
| **Type** | **Time** | **Days** | **Where** |
| Class | 15:40 – 16:30 | Wednesday | FENS G032 |
| Class | 12:40 –14:30  | Friday | FASS G018 |

**Course Objective:**

This course introduces students to the concept of technological innovation and technology entrepreneurship. It focuses on the subject of technological innovations, the process of innovation from laboratories to markets, how new ventures discover and seize technological opportunities and the process of new technology-based venture formation process.

The aim of this course is to provide students with some necessary skills to assess new technologies for their technological and commercial potentials, to recognize the link between new technologies and entrepreneurial opportunities, to understand the legal procedure for the protection of new technologies, products, services, etc., to understand the product development and design stages and the launch of new products to customers and the marketing of new high-tech based products and services. In this course, the aim is not only to understand the theories of technological innovations and entrepreneurship but also to discuss the practice of technology commercialization and technology venture creation. Therefore, case studies and course final project are important; most of the theoretical parts are followed by the case studies. In this course, technology transfer from universities to industry, intellectual property protection, licensing, new product development, lean entrepreneurship and creation of technology-based ventures will be discussed in details.

**Learning Outcomes:**Upon successful completion of the course, the student should be able to:

1. Explain and use some main concepts such as innovation, types of innovation, technology life cycle, dominant design, technology commercialization, technology transfer, technology-based ventures etc.
2. Explain the process of creating technological innovations and their link to entrepreneurship process
3. Understand the technology commercialization concept and process,
4. Assess a new technology for its commercial potential
5. Understand the main issues of intellectual property management, the process of technology licensing and technology transfer to / from start-ups .
6. Understand and develop skills for product development and design process
7. Develop a business model for a new technology-based product/service

**Course Material:**

**Textbook:** Technology Entrepreneurship: Taking innovation to the Marketplace. 2nd Edition (2014). Thomas N. Duening, Robert A. Hisrich and Michael A. Lechter. Elsevier: Amsterdam. (Online version of the book is accessible over the university library databases)

**Readings:**

1. Types of innovation: Several types on many fronts. In “Harvard Business Essentials: Innovator's Toolkit” by Harvard Business School Press. Product ID: 7195BC-PDF-ENG
2. “What makes entrepreneurs entrepreneurial” by Saras D. Sarasvathy (revised in 2018), Product ID: UV1356-PDF-ENG
3. Technological entrepreneurs. In “The Technological Enterpreneur’s Playbook” by Chaston, I. (2017). Product ID: BEP403-PDF-ENG
4. “Recognizing and shaping opportunities” by Lynda M. Applegate & Carole Carlson. Product ID: 8056-PDF-ENG
5. “Disciplined entrepreneurship” by Donald Sull (2004), MIT Sloan Management Review, Product ID: SMR156-PDF-ENG
6. “Pitching business opportunities” by Applegate, L.M.; Kerr, W.; Brownell, A. (2011), Product ID: 811086-PDF-ENG
7. “How to write a winning business plan” by Rich, S. R. & Gumpert, D.E. (1985), Harvard Business Review, Product ID: 85314-PDF-ENG
8. “Why the lean start-up changes everything” by Steve Blank (2013), Harvard Business Review

**List of Cases**

The details of the case will be announced from SuCourse.

**Course Web:**

Lecture notes and information about assignments will be available on your course’s SUCourse site. Students should check the website at least once a week. The following components of SUCourse will be actively used:

* Assignments,
* Evaluation
* Turnitin.

The instructor will use online assignment grading and therefore the submission of assignments in given deadlines is very important otherwise online submissions will not work. Students are expected to submit their assignments on time.

Sabanci University uses a very powerful web-based tool called Turnitin. Turnitin is the worldwide standard in online plagiarism prevention. It allows instructors to compare student papers against a database composed of millions of articles. Every paper you submit will be scanned by Turnitin, and results will be reflected in your grades.

**Instructional Design:**

The course will be taught with an interactive approach using a variety of tools and methods. We will have

* Case discussions
* Simulation
* Guest speakers
* In-class exercises
* In-class student presentations
* Team project

The instructor will use Power Point slides to present main topics and discussions on the relevant topic, and these materials will be available at SUCourse. These slides will provide a review of the main points / discussions/theories about the topic. Case study group discussions, in-class exercises are important part of this course. Therefore, students are expected to actively contribute to the class discussions.

**Please NOTE that: If you attend lectures online and synchronous over Zoom, you must use your SU email account.**

**Grading**:

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| --- | --- |
|  |  |
| In-class case discussion and short assignment | : 10 % |
| Simulation & simulation report | : 10 % |
| Attendance MidtermFinal examTeam project Final presentation (5%) Final report (15%)  | : 5%: 20%: 35%: 20% |

Peer Evaluation in Teamwork

Students will be asked to provide an evaluation of the members of their team in Team Project. Each student will divide 100 points between the members of her team, including herself. This division should reflect that person’s judgment of the contribution of the members of her team. The scores should not be merely functions of time spent by each member, but they should be measures of the "contribution;" their relative contribution to the idea generation, research, analysis, writing, oral presentation, report writing, etc. If the team was highly functional, and each member did what they committed themselves to, then the student can assign the same mark to each member of the team. If, on the other hand, some members of the team did not fulfill their commitments and did not contribute as much as the others, then points can be distributed unevenly.

The points submitted by all members of the team will be aggregated by the instructor. Every student will be given his/her aggregate peer evaluation, without disclosing the individual peer evaluations to the students. In case there is no consensus among the team, for example, if three students divide the marks evenly and the fourth one divides them unevenly, then the instructor will use his/her judgment to assign peer evaluation marks--possibly after meeting with the members of the team. In cases where there are conflicting marks, it is most likely that the instructor will meet with the team members and provide a mark based on an interview. For example, in a group of four, if Students A and B believe they did most of the work, and Students C and D believe otherwise, the team may be called in for an interview in order to be fair to everyone. Past experience indicates that in most groups points will be distributed evenly. There will be a few groups where peer evaluations will play a role in the marks. The primary goal of this exercise is to avoid giving undeserved credit to individuals who did not help their teams. However, it is possible to have upwards adjustments of marks in case of students who have done more than what the group expected of them.

The peer evaluation will have a direct impact on your Team Project. To give a simple example, if the group mark is 15 out of 20, and if your peer evaluation indicates that your contribution was less than what was expected, then your Team Project mark will be less than 15 out of 20. There are no simple rules for adjustment.

**Requirements:**

*In-class case discussion and short assignment (10%):*

The case study is important to understand how the issues related to technology commercialization and entrepreneurship are dealt with real actors such as entrepreneurs, scientists, engineers, etc. Students who physically attend the lecture will discuss the case within groups in the classrooms. For those who attend the lecture online, Zoom breakout rooms including 4-5 students will be created. In these groups, students will discuss the given case and try to find out solutions to the questions prepared by the instructor. 3-4 groups will be selected to present and discuss their solutions with other students/groups. After each case, students will be asked to complete a short question form and submit their answers to SuCourse. Students’ performance will be evaluated by using their participation to in-class exercise and discussions and their responses in the question form.

*Simulation (10%):*

It is a single-player simulation. Students are given a short brief about the simulation. They will run the simulation in their own computer. All the technical details will be provided before the session. The instructor will be able to track the decisions of each student separately and will get the report for each student. Students are expected to complete this activity and also prepare a short report that should include the logic of their decisions, how successful they are and what they would change to be more successful. The report should be between 300-700 words.

*Team project (20%):*

This is a group assignment. Team size is 4-5 students. For this assignment the teams will find / choose a technology that can be commercialized by a start-up. Be careful that merely selling products or services over internet or mobile applications is not an example of a technology-based start-up for this course. If you have doubts about the technology you choose, please contact the instructor.

The report and the presentation must cover the following deliverables:

1. Product concept and vision:  What is the problem that you intend to solve? How important is this problem to customers? What is the market opportunity? What makes your solution/product better than other solutions or attractive to customers? How does your solution make the world a better place? Is there existing intellectual property that you must license or new intellectual property you must develop in order to pursue this opportunity? Is there any similar products in the market; are these products/solutions successful? Why or why not?
2. Market analysis: You need to collect detailed information and data about the market and the industry you are planning to enter? Why and how is this market or industry attractive? Who are the primary target customers? How big is this market? Is it a growing market?
3. Customer development and growth strategies: This part is very important. You need to be clear about your potential target customers, what they need, what they expect, how they can be reached, how they can be attracted and convinced to use your solution, etc. Also you need to think about possible other market niches you can reach for growth. How can you make your start-up to grow? What kind of strategies you can develop for growth? Such as growth with reaching out new market niches, growth with innovation and product differentiation, growth through internationalization, etc.
4. Competition and external risk analysis: You need to make a research on current and possible future competitors. What are the advantages and weaknesses of these current and future possible competitors over your start-up/product? The current market entry barriers for your start-up; if you are a first mover company how can you build up entry barriers for followers? How can you compete with these competitors? This part should also include an analysis of the external risks such as economic and financial risks, legal issues/problems, risks associated with technological trajectories, etc.
5. Business model: You are expected to design your business model and explain the details of the models, your assumptions, plans, etc.
6. Reference list: List of data sources you use.

The length of the course assignment must be between 10-12 pages, double spaced with 12 point fonts.

*Attendance and class participation (5%):*

Attendance is critical to learning because of the structure and materials used in this course. It is very important for students to come to class prepared to participate the discussions in the classroom or online. Attending the class is required but not sufficient. Students are required to actively participate class discussions. Class participation is expected both for case study discussions and for lectures. Your contribution is important for discus­sions, since what you learn will depend upon what you put into the course (your own knowledge, experience, insights, and participation).

*Midterm (20%)& Final exams (35%)*

Midterm and final exams will include short essay questions. Both exams are planned to be held on campus in arranged classrooms. Depending on the course of pandemic some necessary changes can be made in exams. Students will be updated about any change as quick as possible.

**Academic Honesty:**

Learning is enhanced through cooperation and as such you are encouraged to work in groups, ask for and give help freely in all appropriate settings. At the same time, as a matter of personal integrity, you should only represent your own work as yours. Any work that is submitted to be evaluated in this class should be an original piece of writing, presenting your ideas in your own words. Everything you borrow from books, articles, or web sites (including those in the syllabus) should be properly cited. Although you are encouraged to discuss your ideas with others (including your friends in the class), it is important that you do not share your writing (slides, MS Excel files, reports, etc.) with anyone. Using ideas, text and other intellectual property developed by someone else while claiming it is your original work is *plagiarism*. Copying from others or providing answers or information, written or oral, to others is *cheating*. Unauthorized help from another person or having someone else write one’s paper or assignment is *collusion*. Cheating, plagiarism and collusion are serious offenses that could result in an F grade and disciplinary action. Please pay utmost attention to avoid such accusations.

**Classroom policies and conduct**

Sabancı BA in Management Program values participatory learning. Establishing the necessary social order for a participatory learning environment requires that we all:

* Come prepared to make helpful comments and ask questions that facilitate your own understanding and that of your classmates. This requires that you complete the assigned readings for each session before class starts.
* Listen to the person who has the floor.
* Come to class on time.

**Course Schedule:**

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| **Week 1** | **Date:** | **Sep. 29- Oct. 1, 2021** |
| Topic:Readings: | Overview of the syllabusIntroduction: Nature of technological changes, sources and types of innovation, the link between technology development, innovation and entrepreneurship“Types of innovation: Several types on many fronts” Coursepack |
| **Week 2** | **Date:** | **Oct. 6-8, 2021** |
| Topic:Readings: | Ideation & creativity: Searching for technological entrepreneurship opportunitiesTextbook. Ch. 3 |
| **Week 3** | **Date:** | **Oct. 13-15, 2021** |
| Topic:Readings: | Technology entrepreneurs; entrepreneurial attitude: effectuation“What makes entrepreneurs entrepreneurial” Coursepack“Technological entrepreneurs” Coursepack |
| **Week 4** | **Date:** | **Oct. 20-22, 2021** |
| Topic:Readings:Requirements: | Protecting innovations, intellectual property, technology transfer, licensing agreementsTextbook Ch. 5Formation of project teams |
| **Week 5** | **Date:** | **Oct. 27, 2021** |
| Topic:Requirements: | Case study: Sign language glovesReadings for the case will be shared |
| **Week 6** | **Date:** | **Nov. 3-5, 2021** |
| Topic:Readings:Requirements:  | Creating value by innovating, value proposition, understanding customers, design thinking“Recognizing and shaping opportunities” CoursepackDiscussion of Case: Sign language gloves |
| **Week 7** | **Date:** | **Nov. 10-12, 2021** |
| Topic:Readings: | Lean entrepreneurship / experimenting, understanding business model, business model canvas“Disciplined entrepreneurship” Coursepack“Why lean start-up changes everything” Coursepack |
| **Week 8** | **Date:** | **Nov. 17-19, 2021** |
| Topic:Readings: | Crafting a technology business plan & business pitchingTextbook. Ch. 7“How to write a winning business plan” Coursepack“Pitching business opportunities” |
| **Week 9** | **Date:** | **Nov. 24-26, 2021** |
| Topic: | **Midterm exam** |
| **Week 10** | **Date:** | **Dec. 1-3, 2021** |
| Topic:Requirements: | Creating markets for new technologies/ marketing / early adopters/ scale up/ growth strategiesCreating markets for new technologies/ marketing / early adopters/ scale up/ growth strategies**In-class exercise: Simulation: Innovation marketing simulation: Crossing the Chasm** |
| **Week 11** | **Date:** | **Dec. 8-10, 2021** |
| Topic:Requirement:  | Product design and development, MVPs.Teaming and creating and innovative culture**Textbook. Ch. 4 & Ch. 12** |
| **Week 12** | **Date:** | **Dec. 15-17, 2021** |
| Requirement: | Financing technology ventures/raising funds/ business angels/ VC financing**Textbook. Ch. 8 & Ch. 13** |
| **Week 13** | **Date:** | **Dec. 22-24, 2021** |
| Topic: | Team project final presentationsSubmission of group project written reports |
| **Week 14** | **Date:** | **Dec. 29, 2021** |
| Topic: | New technology trends for entrepreneurship & Guest lecturer |