Transversal doctoral training program

Creating and capturing value from innovative tech

Ph.D. Class ENG-642

Fall Term 2024

Lecturer

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Course Overview and Objectives:

Innovations generate a range of new business opportunities: they can be applied to create different offerings that address the needs of different types of customers.

In this hands-on course, we will learn how to identify and evaluate business opportunities stemming from an innovative technology, and how to set the ground for a successful entrepreneurial endeavor.

The goal of this course is threefold:

1) to understand the process of opportunity identification and evaluation in the context of new technologies;
2) to acquire practical business tools and key transversal skills for the adoption of entrepreneurial mindset and the consideration of entrepreneurship as an alternative career path
3) to apply this know-how on a real invention, and gain hands-on experience in this all-important process.

During an intensive 5-day course, students will work in teams on developing a commercialization strategy for an advanced technology. In particular, each student will present an innovative technology from their lab and we will form teams around selected inventions. The teams will then apply tools and skills to identify and evaluate business opportunities stemming from this innovation, so that we can create and capture significant new value.

The course provides a unique opportunity to gain and practice a range of transversal skills that are important not only for entrepreneurship, but for a diverse set of career paths. These include:

- **communication and presentation skills** (interviewing a potential customer, presenting an advanced technology to non-expert, practice active listening, and more)
- **teamwork** and **interdisciplinary collaboration**
- **responsible leadership** (understanding the environmental and societal impact of innovation)
- **learning from others** (peer learning and interaction with alumni)

Teaching Methods:

This course will combine several teaching methods:

- Class lectures will present applicable tools with detailed explanations on how to apply them, along with numerous examples and cases.
- You will work in groups on a real case, i.e. generate ideas for market applications, identify problems, validate and evaluate them to develop a promising strategy for a specific

innovation. Thereby you will be able to experience the early stages of new venture creation at first hand.

- An important part of this class is peer learning: you will not only see the progress your project is making, but also observe and learn from other projects.

As much of the learning will occur in the classroom, class attendance and active class participation are crucial to obtain the value this class is offering. Thus, it is imperative that you come to class prepared. Please note that group work outside the class is an essential element of this course. Expect an above-average workload for this class.

Teaching Materials:

- Course slides, available before class on Moodle
- Recommended reading for each meeting (see course program below)

Dates

This blocked course will be given on November 18-22, 2024, at 9:00-14:00

Student Assignments

This is a 2 ECTS course.

You will work in groups on a new venture proposal, i.e. generate ideas for market applications, identify problems, analyze and evaluate alternatives, to develop a promising commercialization strategy for a specific technology.

Overall, students will need to submit 3 assignments:

	Assignment	Short description	Due date
1	Preface report (individual assignment)	What are your objectives and expectations in taking this course? Do you have entrepreneurial intentions? Tell us about the technology you develop in the lab and where	13.11.24

		it could bring value	
2	Business presentation (team assignment)	Present the output of your 5-day analysis: present the technology and the opportunities you identified, share your validation and evaluation process and your path to create and capture value	22.11.24
3	Reflection report (individual assignment)	Summarize your learning experience: What are your takeaways? Which skills did you gain and why are they valuable for you? Did your entrepreneurial intentions change following the course and why? Which career paths are you considering after this course?	2.12.24

Detailed instructions for all the assignments will be given separately

Tentative Course Plan

Session	Content	Recommended reading/ viewing	Deliverables
1 18.11.24	• Course Overview • Basic business terminology • Technology presentation & team formation • Identifying market opportunities for an innovation (Worksheet 1 of the Market Opportunity Navigator) • Team work on Worksheet 1	• The Market Opportunity Navigator- short overview video • Where to Play/ Gruber and Tal, Part 2.1	The filled Worksheet 1
2 19.11.24	• Share & learn: 1-2 presentations of Worksheet 1, Q&A • The Value Proposition: assumptions and phrasing • Team work: what is your value proposition • Validating value propositions through customer interviews • Team work on interview preparation	• Value proposition design/ Osterwalder & Pigneur. Part 1, 24-75 • The Mom test • Talking t humans/ Giff Constable	Interview one external person

3 20.11.24	• Share & learn: 1-2 presentations of interview takeaways, Q&A • Evaluating the attractiveness of your opportunity: Potential and Challenge (Worksheet 2 of the Market Opportunity Navigator) • Assessing the social/ environmental impact of your opportunity • Team work on Worksheet 2	• Where to Play/ Gruber and Tal, Part 2.2 • Mullins, J. 2006. The new business road test: What entrepreneurs and executives should do before writing a business plan. Chapter 1: 3-23	The filled Worksheet 2 for 1-3 options
4 21.11.24	• Share & learn: 1-2 presentations of Worksheet 2, Q&A • How to focus smartly (Worksheet 3 of the Market Opportunity Navigator) • Guest speaker: how EPFL supports budding entrepreneurs • Group work on Worksheet 3 and business presentations	• Where to Play/ Gruber and Tal, Part 2.3 • Beinhocker, E., 1999. Robust adaptive strategies. MIT Sloan Management Review	The filled Worksheet 3, the business presentation
5 22.11.24	• Learning from the successes and mistakes of a budding entrepreneur- Guest speaker • Business presentations by teams • Main takeaways and course wrap-up		

About the lecturer

Dr Sharon Tal helps founders and managers find the best market for their innovation. She gives lectures and workshops in accelerators and universities around the world, and serves as a mentor in many organizations that aim to help budding entrepreneurs. Sharon has over a decade of experience in marketing and in strategic consulting. Her PhD research looked at market entry decisions of hundreds of startups and its consequences on firm performance and flexibility.

Together with prof Marc Gruber (EPFL), they developed the Market Opportunity Navigator (a tool to identify, evaluate and prioritize market opportunities) and co-authored the complementing book: 'Where to Play' (FT publishing).