

# High-tech Entrepreneurship

## 20 hours (8 lectures) – 2 credits

Version of February 13, 2024

This 20-hours course is designed to introduce participants, **PhD and undergraduate students** from different disciplines (**STEM**, but also **Social Sciences** and **Humanities**) and also young researchers and post-docs, to the **basic** knowledge and competences about high-tech entrepreneurship.

More precisely, the course will provide participants with the basic understanding of the role, analytics and process of business planning that lead to the creation of **new innovative business ventures**, especially regarding those which are generated within an academic environment, on the basis of public research.

They will learn and gain direct experience about patents, university-industry collaborations, contract research, starting a new company, marketing high-tech inventions, etc. The objective is **to bring participants to have their business model and business plan ready at the end of the course**.

Participants will also have the opportunity of setting up real proposals for start-ups which they will be able to use for start-up competitions such as Start Cup Toscana or other possible calls launched by Sant'Anna and other universities.

The course is designed mainly – but not only – for participants from universities which are part of the **JoTTO** initiative (i.e. Scuola Superiore Sant'Anna, Scuola Normale Superiore, IMT Lucca, IUSS Pavia, GSSI L'Aquila, SISSA Trieste). Students from other universities and from EELISA Network can also apply.

The course has been designed both for those who are planning to set up an innovative and/or high-tech start-up and for those who might benefit from the course's contents in an existing company, in their professional activities or in a research context. The course is organized in collaboration with the EELISA project and Start Cup Toscana.

**The course will be in presence, in Pisa.**

In order to attend to the course, please register by sending an e mail to [andrea.piccaluga@santannapisa.it](mailto:andrea.piccaluga@santannapisa.it) or [Giovanni.tolin@santannapisa.it](mailto:Giovanni.tolin@santannapisa.it)

The course is coordinated by Andrea Piccaluga and Alberto Di Minin, who will be present in every lecture, and its contents and organization are shared within the JoTTO initiative.

External “guest teachers” will also be invited.

**Andrea Piccaluga**, professor of innovation management at the Institute of Management, Scuola Superiore Sant’Anna (SSSA), has been delegate for technology transfer at SSSA for several years and president of Netval (Network per la Valorizzazione della Ricerca) from 2014 to 2019.

**Alberto Di Minin** is professor of management at the Institute of Management, Scuola Superiore Sant’Anna. He is also Research Fellow with the Berkeley Roundtable on the International Economy (BRIE), University of California – Berkeley. He is one of the most cited scholar in the field of Open Innovation.

Students interested in obtaining the **two credits (CFU)** need to follow 80% of the lectures and prepare a business plan for a new innovative start-up at the end of the course, either individually or with other students.

## PROGRAM

### Lecture #1 – Entrepreneurship as a possibility for generating impact from public research

**March 4, 2024 - 3pm-6pm (Aula 3, Scuola Sant’Anna, Pisa)**

**Andrea Piccaluga, with the presence of SSSA’s Technology Transfer Office and Alessandra Patrono, from Scuola Normale Superiore.**

*Topics: description of the course, participants’ presentation, the fundamentals of knowledge exchange and Technology Transfer; the valley of death; financial needs in different phases of the start-up process; FFF, business angels and VCs; TRL levels and proof of concept initiatives; the role of the Business Plan; how VCs evaluate a new team.*

- Cesaroni, F., & Piccaluga, A. (2016). The activities of university knowledge transfer offices: Towards the third mission in Italy. *The Journal of Technology Transfer*, 41, 753-777.
- Fini, R., Rasmussen, E., Siegel, D., & Wiklund, J. (2018). Rethinking the commercialization of public science: From entrepreneurial outcomes to societal impacts. *Academy of Management Perspectives*, 32(1), 4-20.

### Lecture #2 - From the first idea to starting up a company. The Business Model Canvas, innovation intermediaries and Proof of Concept programs

**Andrea Piccaluga and Giovanni Tolin**

**March 11, 2024 - 3pm-5pm (Aula Magna Storica, Scuola Sant’Anna, Pisa)**

*Topics: purpose, Open Innovation, teams’ composition, conflicts and communication; motivations to set up a company; inspiration from some real cases, introduction to Technology Transfer Offices. The business model canvas tool; the role of the business plan and its composition; how and when a BP has to be written; where info can be found.*

- Chesbrough, H., W. (2003). The Era of Open Innovation. *MIT Sloan Management Review*.
- Blank, S. (2013). Why the lean start-up changes everything. *Harvard Business Review*.

### Lecture #3 – Not only technology! Administration, accounting, incentives, finance and taxes in start-ups

**Guest teacher: Andrea Tenucci (Institute of Management, SSSA)**

**March 18, 2024 - 3pm-5pm (Aula Magna, Scuola Sant'Anna, Pisa)**

Topics: basic info about a balance sheet; basic administration and taxation; financial and economic cycles.

### Lecture #4 - Tips and tools for valorization of results in the LS sector

**Guest teacher: Andrea Frosini (Toscana Life Sciences)**

**March 25, 2024 - 4.30pm-6.30pm (Aula Magna Storica, Scuola Sant'Anna, Pisa)**

Topics: Examples and best practices of intellectual property valorization and exploitation in the field of Life Sciences. What is patentable? Which are the best strategies for the protection of results in these fields?

- Lavie, D., & Drori, I. (2012). Collaborating for knowledge creation and application: The case of nanotechnology research programs. *Organization Science*, 23(3), 704-724.

### Lecture #5 – Business angels and venture capitalists: how do they decide about financing your start-up?

**Guest teacher: Nicola Redi**

**April 8, 2024 - 3pm-6pm (Aula 3, Scuola Sant'Anna, Pisa)**

Topics: how do venture capitals analyze business plans? How to deal with growth processes and exits? What are the differences between financial and industrial investors?

- Mulcahy, D., Weeks, B., & Bradley, H. S. (2012). We have met the enemy ... and he is us: lessons from twenty years of the Kauffman Foundation's investments in venture capital funds and the triumph of hope over experience.
- Gompers, P. A., Gornall, W., Kaplan, S. N., & Strebulaev, I. A. (2021). How do venture capitalists make decisions?. *Harvard Business Review*.

### Lecture #6 – Let's do it seriously: going beyond the first steps and scaling up. How to deal with industrial and financial partners. (In Italian)

**Guest teachers: Andrea Arienti (3DNextTech)**

**April 15, 2024 - 3pm-6pm (Aula 3, Scuola Sant'Anna, Pisa)**

Topics: more about entrepreneurial motivations; how to engage an industrial partner; bridging between university and industry; how to deal with initial funders; from prototype to products: where to find info and technical solutions; to grow or not to grow? Is it better to own a small cake or a slice of a big cake?

- Rasmussen, E., & Sørheim, R. (2012). How governments seek to bridge the financing gap for university spin-offs: Proof-of-concept, pre-seed, and seed funding. *Technology Analysis & Strategic Management*, 24(7), 663-678.

- Collins, L., & Pierrakis, Y. (2012). The venture crowd: crowdfunding equity investments into business. *Nesta Org UK*.

## Lecture #7 – About concrete issues: Intellectual Property rights, setting up a team, presenting your ideas to others, etc.

**Andrea Piccaluga and Giovanni Tolin**

**April 22, 2024 – 4.30pm-7.30pm (Aula Magna Storica, Scuola Sant'Anna, Pisa)**

*Topics: what is Intellectual Property? The patenting process; from invention to patents and licenses in university; where to look for patent information; to patent or not to patent?*

- Di Minin, A., & Faems, D. (2013). Building appropriation advantage: An introduction to the special issue on intellectual property management. *California Management Review*, 55(4), 7-14.
- Bubela, T., Gold, E. R., Graff, G. D., Cahoy, D. R., Nicol, D., & Castle, D. (2013). Patent landscaping for life sciences innovation: toward consistent and transparent practices. *Nature Biotechnology*, 31(3), 202-206.

## Lecture #8 – Final session: presenting your idea to investors

**May 17, 2024 – 3pm-6pm (Aula Magna, Scuola Sant'Anna, Pisa)**

*Topics: in this lecture we will summarize the course's content and organize participants' presentations.*

**We will invite, among others: Carlo Frighetto (Unione Industriale Pisana, confirmed), Andrea Di Benedetto (Polo Tecnologico di Navacchio), Paolo Dario (Artes 4.0), Corrado Priami (Università di Pisa), Fabrizio Landi (Panakes), Federico D'Annunzio (Traent), Phil Shapira (confirmed) and others.**

**An "aperitivo" for everyone will be organized at the end of the session, from 6 pm to 7.30 pm.**