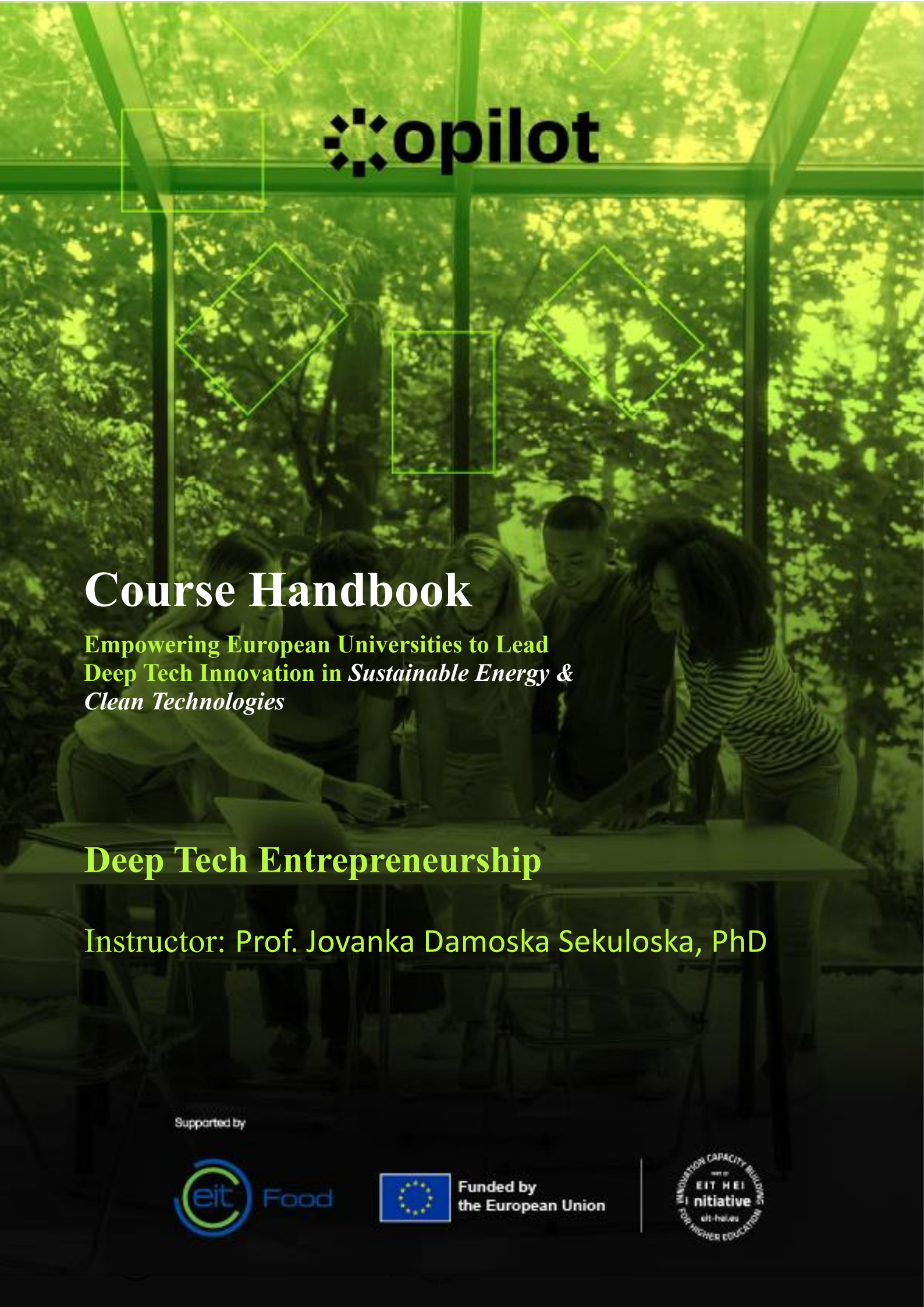


Course Handbook

Empowering European Universities to Lead Deep Tech Innovation in *Sustainable Energy & Clean Technologies*

Deep Tech Entrepreneurship

Instructor: Prof. Jovanka Damoska Sekuloska, PhD

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INNOVATION CAPACITY BUILDING FOR HIGHER EDUCATION

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Course Information

Title: ***Deep Tech Entrepreneurship***

Instructor**:** Prof. Jovanka Damoska Sekuloska, PhD

ECTS credits**:** 2

Course structure: 5 sessions, 2 lectures + 2 tutorials per session

Mode of delivery: o*nline*

Course Summary

This course equips aspiring Deep Tech entrepreneurs with the essential knowledge and skills to identify opportunities, evaluate emerging technologies, design effective business models, attract funding, build capable teams, and manage entrepreneurial risks. Through a combination of theoretical insights and practical applications, participants will learn how to evaluate technical viability, develop viable business models, secure funding, build and manage teams, and mitigate risks inherent to Deep Tech ventures. The course also examines the broader Deep Tech ecosystem, including key enablers such as investment mechanisms, university technology transfer, and collaboration models that connect academia, industry, and investors. By engaging with case studies and best practices in deep tech commercialisation, participants gain hands-on experience in crafting business plans, identifying funding sources, and navigating regulatory frameworks.

Course Participants

The course DeepTech Entrepreneurship is designed for a diverse audience of students, researchers, academic and non-academic professionals, and aspiring entrepreneurs interested in transforming scientific and technological innovations into viable business ventures.

Learning Outcomes

Upon completion of the course, participants will be able to:

- Define the concept of *Deep Technology (Deep Tech)* and identify differences between deep tech and other startups.
- Identify and explain the main actors and structures of Deep Tech ecosystems, including universities, startups, investors, corporations, and public institutions.
- Explain various business models relevant to Deep Tech entrepreneurship and their implications for commercialization and sustainability.

- Apply methods for scouting Deep Tech opportunities and assess the technical and market feasibility of innovations.
- Design viable business models and develop value propositions for Deep Tech startups.
- Develop and present a business plan or commercialisation roadmap for a Deep Tech innovation.
- Build diverse, cross-disciplinary founding teams that bring together the essential skills and expertise.
- Develop a compelling investment pitch deck and funding strategy.

Assessment

In order for each participant to complete the course successfully and be awarded the corresponding ECTS credits, they must pass the course assessment. The outcome of the assessment can be either Pass or Fail.

Assessment methods

- Project assignment (50%): Develop a concept of an innovative deep tech startup opportunity
- Oral presentation (30%): Pitching a business plan for the deep tech startup opportunity
- Class participation (20%): Active participation and contribution in discussions on course topics and case studies

The link between learning objectives and assessment criteria can be seen below.

Learning outcomes	Assessment examples
• Identify and assess a deep tech business opportunity and its level of technology readiness; • Explain the distinctions between deep tech startups and other types of startups • Understand socio-technical dynamics and innovation ecosystems. • Propose a viable business model	Develop a concept of an innovative deep tech startup opportunity
• Create a strategy and business plan for technology commercialisation; • Identify key stakeholders, partners, and accessible resources • Build diverse, interdisciplinary founding teams with the required expertise; • Develop a persuasive investment pitch deck and funding plan.	Pitching a business plan for the deep tech startup opportunity

Mentoring

In the context of the course, participants will have the opportunity to receive one-to-one mentoring in carrying out their assignment/project.

Bibliography

1. Byers T., Dorf R. and Nelson A. (2025). *Technology Ventures: From Idea to Enterprise*, McGraw Hill

A comprehensive text addressing the key factors in the development of deeptech startups. Rich in cases and examples. Technology Ventures integrates clear theoretical frameworks with action-oriented examples and exercises.

2. UNDP (2025) *Global Deep Tech Ecosystems: Catalyzing Innovation for Sustainable Development,* UNDP Global Centre for Technology, Innovation and Sustainable Development, Singapore

The publication provides a global overview of deep tech ecosystems, examining key initiatives, policy approaches, and ecosystem-building efforts across different countries and regions.

3. Erntell H., Dorner K., Berger -de Leon M., Flototto H. and Henz T. (2024). European deep tech: What investors and corporations need to know, *McKinsey & Company, https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/european-deep-tech-what-investors-and-corporations-need-to-know#/*

The paper analyzes the characteristics of deep-tech ventures, finding they have longer development cycles, larger founding teams, and stronger links to academia compared to other technology ventures.

4. Barringer B. R. and Duane Ireland R. (2022) Entrepreneurship: Successfully Launching New Ventures, 6th ed., Pearson Education Limited

A comprehensive text, addressing recognising opportunities and generating ideas, developing an effective business model, and writing a business plan.

5. Howell, S. T. (2017). Financing Innovation: Evidence from R&D Grants. American Economic Review, 107(4), 1136-1164.

This paper analyzes the impact of R&D grants on innovation outcomes, finding that they substantially increase patenting and revenue growth for startup firms.

6. Bradley R.S., Hayter S. C. and Link N. A. (2013) Models and Methods of University Technology Transfer, Foundations and Trends in Entrepreneurship Vol. 9, No. 6, 571-650

The paper examines alternative views of technology transfer that better capture the progression of the university toward an entrepreneurial and dynamic institution.

7. Brantnell A. and Baraldi E. (2022) Understanding the roles and involvement of technology transfer offices in the commercialisation of university research, Technovation Vol 115, 102525

The paper explores how patentability and ownership of academic inventions are connected to the roles and involvement of TTOs in the commercialisation of innovations.

8. *https://techventures.stanford.edu/*

Additional resources for learning about practical issues for technology ventures

Other Important Information

Course evaluation: Upon successful completion of the course, participants are required to fill in the course evaluation questionnaire.

Certificate: Upon successful completion of the course, participants will be issued a certificate of achievement provided by UIST and EIT Food KIC.

Plagiarism: UIST has explicit rules concerning academic dishonesty, including plagiarism. Course participants are reminded that all work submitted as part of the requirements for any examination (including coursework) of UIST must be expressed in their own words and incorporated in their own ideas and judgements.

Course Timetable

Session	Date and Time	Instructor	Venue
1st	Friday 31.10.2025, 14:00 -18:00	Jovanka Damoska Sekuloska	Online
2nd	Monday 3.11.2025, 14:00 -18:00	Jovanka Damoska Sekuloska	Online
3rd	Friday 7.11.2025, 14:00 -18:00	Jovanka Damoska Sekuloska	Online
4th	Monday 10.11.2025, 14:00 – 18:00	Jovanka Damoska Sekuloska	Online
5th	Friday 14.11.2025, 14:00 -18:00	Jovanka Damoska Sekuloska	Online

Contact Details of Instructor

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