Syllabus

Course Description

Course Title	Entrepreneurial Software Engineering
Course Code	76089
Course Title Additional	
Scientific-Disciplinary Sector	INFO-01/A
Language	English
Degree Course	Master in Software Engineering
Other Degree Courses (Loaned)	
Lecturers	Prof. Xiaofeng Wang, Xiaofeng.Wang@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/31445
Teaching Assistant	
Semester	First semester
Course Year/s	2
CP	6
Teaching Hours	40
Lab Hours	20
Individual Study Hours	90
Planned Office Hours	18
Contents Summary	• Nature and characteristics of software startups • Problem and solution identification and validation • Building minimum viable products • Lean analytics and pivoting • Scaling software startups • AI-supported entrepreneurial processes.
Course Topics	The course belongs to the type caratterizzanti – discipline informatiche. Lean Startup adopts a learning-by-doing style, and is designed for acquiring both theoretical and practical skills and knowledge on

	processes of high-tech and software-intensive startups.
Keywords	Startups, MVP (Minimum Viable Product), AI in Entrepreneurship.
Recommended Prerequisites	
Propaedeutic Courses	
Teaching Format	Team projects supported by frontal lectures.
Mandatory Attendance	Attendance is not compulsory, but non-attending students are suggested to contact the lecturer at the start of the course to agree on the modalities of independent study.
Specific Educational Objectives and Learning Outcomes	Knowledge and understanding D1.3 have an in-depth knowledge of the scientific method of investigation applied to even complex systems and innovative technologies that support Software Engineering and its various fields of applications. Applying knowledge and understanding D2.2 know how to design and carry out empirical studies of software systems in order to acquire measurements of their behaviour and evaluate experimental hypotheses in different application fields, such as business, industry, education, or research. D2.4 ability to define an innovative technical solution to an application problem that respects technical, functional, and organisational constraints and requirements. Making judgements D3.3 ability to define work objectives compatible with the available time and resources. D3.4 ability to reconcile conflicting project objectives, find acceptable compromises within the limits of cost, resources, time, knowledge, or risk. D3.5 ability to work with broad autonomy, taking responsibility for projects and structures. D3.6 ability to identify the various roles of software engineering in society and its social and environmental impact on society. Communication skills D4.1 ability to present the contents of a scientific/technical report in a set time in front of diverse audiences, including non-

	specialists. D4.3 ability to work and co-ordinate the work of an multi-disciplinary project team, and to identify activities aimed at achieving the project objectives; Learning skills D5.2 ability to independently keep up to date with developments in the most important fields of information technology. D5.3 ability to extend incomplete knowledge with regard to the final objective of the project, in the context of a problem-solving activity.
Specific Educational Objectives and Learning Outcomes (additional info.)	The educational objective of this course is to equip students with both theoretical understanding and hands-on experience in launching and managing high-tech and software-intensive startups using the Lean Startup methodology. Through a learning-by-doing approach, students will develop the skills necessary to evaluate software business ideas, construct viable business models, and engage in customer discovery and validation. They will also gain experience in iterative product development and testing, learning how to interpret results and adapt based on feedback. Additionally, the course aims to prepare students to make informed decisions under uncertainty and operate effectively in dynamic, data-scarce environments.
Assessment	The evaluation of student performance will be based on both project work and an oral examination. For the project component, students will be assessed on their effective application of the Lean Startup methodology, which reflects their ability to define innovative technical solutions under specific constraints (D2.4), design and perform experimental analyses (D2.2), and apply the scientific method in the context of complex, technology-driven systems (D1.3). Good teamwork will be evaluated through students' capacity to coordinate project teams, identify key activities (D4.3), and collaborate effectively (D4.6), as well as their ability to work autonomously and assume responsibility (D3.5). The innovativeness and quality of the developed idea will further demonstrate students' skills in reconciling conflicting objectives, such as balancing time, cost, and risk (D3.4), and in defining feasible goals within given constraints (D3.3). The quality of the pitch presentation will be used to assess students' communication

	abilities, including presenting technical content clearly to both specialist and non-specialist audiences (D4.1). The oral examination will evaluate the depth of understanding of theoretical principles (D1.3), as well as the clarity and structure of responses, supporting their ability to keep up to date independently with developments in IT (D5.2) and extend their knowledge in problem-solving contexts even when information is incomplete (D5.3).
Evaluation Criteria	For both attending and non-attending students: Project work and oral exam: • Project work to apply the Lean Startup methodology in a startup project (70% of the mark, team score); • Oral exam to test the understanding of theories and knowledge application skills, and verification of project results (30% of the mark, individual score). Note: A positive project result is necessary to attend the oral exam. Both parts of the results must be positive to pass the exam. In case of a positive mark, the project will count for all 3 regular exam sessions.
Required Readings	• E. Ries, The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses. Crown Business, 2011, p. 336. • S. G. Blank, The Four Steps to the Epiphany: Successful Strategies for Products that Win. Cafepress.com.
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Decent work and economic growth, Partnerships fot the goals, Reduced inequalities, Industry, innovation and infrastructure