Innovation space project: innovation and entrepreneurship processes

Subject area: Entrepreneurship course

University:	TU/e
Level:	MA all years
Teaching mode:	completely online, at specific time
Instructor(s):	Akos R. Wetters; Gert Guri

Short description

Among the highest assessed courses by students, in the ISP, you will address in teams a real-life challenge. Company & course coaches' will help you to identify a solution, which is technically feasible, business viable, socially acceptable and legally doable. You will have fun working and getting out of the building for research and validation.You will work on a prototype, and prepare a pitch to finalize the project.

Full description

"This course aims toward challenge-based in interdisciplinary student teams, working on open-ended assignments in close interaction with high-tech companies and societal organizations. It combines the design and engineering of a product/service/system and new business development. The course involves no lectures, but studio style group work, self-study and personal and team development. Several out-of-the box pressure-cooker style workshops will be given, either online or offline. Students are in the lead of their own learning processes. The course is part of educational innovation in TU/e innovation Space.
The course consists of a large integrative project in which in-depth engineering design skills are developed and previously acquired knowledge and expertise are actively shared with students from different backgrounds. A systems approach, observing the complete system rather than a specific component, is stimulated. The students are encouraged to acquire new knowledge and skills by themselves.
The challenges are business and societal challenges that are sufficiently open, complex, and innovative to demand for interdisciplinary collaboration among students. Challenges are offered in collaboration with TU/e innovation Space. Companies, governments, institutes and society as a whole are involved as much as possible.
An overview of the current challenges can be found in the education guide, via this link: https://educationguide.tue.nl/broadening/innovation-space/master/challenges-for-isp-innovation-and-entrepreneurship-processes/?L=2.
During the interactive Kickoff workshop, the students can meet the challenge-owners and listen to their pitches. Based on their preferences, interdisciplinary teams are formed in close collaboration with the

course coordinator and the coach. During the project, students will interact with the relevant stakeholders to present them with real-life problems and creatively develop solutions. Interaction with business and societal organizations will be an important element of this course, next to involving real users.
The project will include defining and refining (i.e. co-evolution of) a problem and ideas for a solution simultaneously and iteratively through analysis, synthesis and reflection processes. Great attention will be given to iterative experimentation of ideas through visualization, prototyping, and testing until a feasible problem-solution fit emerges. This means students have to go out and talk to experts, potential clients and end users as part of the validation.
Students reflect weekly on their personal and team development. The teams present and discuss their intermediary results and get feedback from peers and the coaches. In coaching sessions, teams get also individual feedback to help students steering and structuring their own development and achievements.
The final output per team is a pitch in front of a jury and the external stakeholders involved, the developed prototype, a final report, and a reflection on the learning objectives.
Students that select this course have above-average skills to work independently or in collaboration with a diverse team, aim to acquire knowledge at the forefront of technology, are able to deal with uncertainty, risk, limited resources and show a high degree of interdisciplinarity. Students have an intrinsic motivation to get stuff done and are ambitious when it comes to learning to learn. Students are stimulated to take responsibility for their own learning.
This course is one of the main experiments with education innovation in TU/e innovation Space. Next to using the physical location and facilities of TU/e innovation Space, students are invited to become part of the community of TU/e innovation Space. TU/e innovation Space also offers (online) workshops and innoTalks to all students in TU/e innovation Space. These are additional workshops, there is no mandatory presence for students of this course, but we recommend the workshops to all of you. More information on these workshops will be posted in the schedule.
See more: https://tue.osiris-student.nl/#/onderwijscatalogus/extern/cursus?cursuscode=1ZM150&collegejaar=2021&taal=en"

Learning outcomes

"Each student is able to deliver a crucial contribution to:
ILO 1 Approach (Focus on the process, methodologies and tools linked to the content of the project).
In team they will select and apply appropriate design, engineering and business approaches and tools to create an innovative and science-based solution to a real-life challenge.
ILO 2 Analysis (Focus on exploration, experimentation, validation)
In team they will develop a profound interpretation of a highly complex, real-life problem and the systems around it. Take into account the desirability, feasibility and viability perspective.
ILO 3 Synthesis (Focus on decision making, drawing conclusions)
In team they will develop a problem-driven, creative and integrative design, resulting in an original and validated prototype that balances desirability, feasibility and viability.
ILO 4 Interdisciplinarity (Focus: synergies, symbioses, complementary competencies)
In team and individually students will identify, envision and promote the role and contributions of engineering disciplines in solving problems in business, industrial and societal environments. How to integrate those diverse contributions in the form of a validated prototype.

ILO 5 Skills and behaviour (Focus on showing evidence with clear examples that are validated by peers)
In team and individually, students will develop leadership and project management skills to organize and perform an interdisciplinary, hands on, and team-based engineering design and/or business development project. How to communicate a message at different levels of elaboration to all kind of relevant parties, orally and in writing. How to work independently, be pro-active, develop entrepreneurial mindset.
ILO 6 Personal and team development (Focus on learning process and development) Individually and in team, students will define and regularly reflect on a personal and team development plan, indicating personal and team goals and needed development."

General information

Contact hours per week:	Team and Individual coaching and interaction 8 hours
Total workload:	Around 290 hours (16 h per week) (in student hours for the whole course)
ECTS credits:	10
Language:	English
Course start date:	05 September 2022
Course end date:	20 January 2023
Add. info about start date:	First week of September depending on the TU/e Calendar.
Weekly teaching day/time:	Wednesday and Friday
Time zone:	CET (Denmark, Germany, France, Netherlands, Switzerland, Czech Republic)
Further information:	Unenrolment: 1 week before the course starts
Prerequisites:	Collection 1: Completed Final examination Bsc program
	Collection 2: Completed Pre-Master
Activities and methods:	Seminars, Group work, Lab-work, Self-study, Practices, Exercises, Tutorial sessions, Interaction with companies and other stakeholders
Presence on campus:	Not necessary

Final examination

Form:	Report (including team reflection), prototype, pitch and individual reflection
Date:	
Location/format:	online

Re-sit possibility:	no
Transcript available:	end of semester
Add. info/requirements:	Examination consists of 2 parts: 1. Team assessment: including a report, prototype, pitch, and team evaluation (by lecturer and peers) and 2. Individual reflection on learning objectives. Each of these parts has an interim review. Team deliverables (report, prototype, pitch) (70% of final mark), Individual reflection (30% of final mark). To pass this course students are required to score on average 5.5 or higher for the individual and the team assignment.

Registration

To register for this course, follow the registration requirements of your **home university** as specified here: www.euroteq.eu/courses-registration.

Administration

Number of places:	10-20 students
Minimum participants:	5
Internal course code:	1ZM150
Contact:	g.guri@tue.nl

This course is part of the EuroTeQ Engineering University joint course catalogue 2022/2023. This is a collaborative activity of the partner universities DTU, L'X, TU/e, TalTech, CTU, TUM as well as Technion. Students from these universities can participate in the offered courses. It is the responsibility of the student to check if you fulfil the requirements to participate in a specific course. Students are also advised to check with their home institution how to get recognition of the ECTS credits gained in courses of the EuroTeQ course catalogue. For further information about EuroTeQ Engineering University, visit www.euroteq.eu or get in touch with the above-mentioned point of contact.