



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Innovative Entrepreneurship

Course

Field of study

Artificial Intelligence

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/5

Profile of study

general academic

Course offered in

English

Requirements

compulsory

Number of hours

Lecture

30

Laboratory classes

0

Other (e.g. online)

0

Tutorials

0

Projects/seminars

30

Number of credit points

4

Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

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Prerequisites

Student has a basic knowledge and competences related with the introduction to entrepreneurship.

Student, in terms of the social competences, has attitudes such as, honesty, responsibility, persistence, cognitive curiosity, creativity, propriety, respectfulness to the others.

Course objective

1. Student knows how to establish and develop the own IT company.

2. Student has the basic knowledge of methods and tools for systematic innovation and know how to apply the selected methods.



3. Student develops the competencies, such as, entrepreneurship, designing, IT product quality assurance and its market acceptance, business planning, attract financial support and the other competences which are critical for the start up's development.

4. Student has a ability to work creatively and to work in teams.

Course-related learning outcomes

Knowledge

K1st_W8: Student knows and understands the general rules of starting and running a business (including individual enterprises), as well as basic economic concepts related to IT projects and investments.

K1st_W10: Student has a basic knowledge of patents, the law of copyright and related rights, fundamental rights of intellectual property and personal data protection, as well as transfer of technology mainly related to computer solutions within the scope of artificial intelligence.

Skills

K1st_U5: Student has basic intellectual capabilities in social and economic sciences needed for carrying out engineering activities and allowing to detect economic, ethical, legal, and social aspects when formulating and solving the IT tasks.

K1st_U6: Student has the necessary training for working in a business environment, including an industrial environment, and knows the safety rules related to the work of a computer scientist - a specialist in the field of AI.

K1st_U14: Student can employ information and communication tools at different stages of carrying out the IT projects, including elaborating a well-documented problem study, giving an oral presentation, communicating through specialized terms, and discussing diverse opinions in both technical and non-specialized environments.

Social competences

K1st_K5: Student can think and act in an enterprising way, finding the commercial application for the created AI-based systems, having in mind the economic benefits as well as legal and social issues.

K1st_K6: Student is aware of the social role of a graduate of the university of technology and understands the need to inform society, in an intelligible way, on the engineering activities, achievements of AI, and other aspects related to the work of a computer scientist - a specialist in the field of AI.

K1st_K7: Student is ready to act responsibly in professional life, encourage and promote the suitable behavior patterns, correctly identify and solve the dilemmas related to the work of a computer scientist - a specialist in the field of AI.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture: Formative assessment - student needs to participate in discussions (8 teamwork tasks = 40 points). Summary assessment - student submits the written assignment related with the analysis of the



selected concept of the inventive solution for IT and its business application (40 points). The student presents the results of analysis and discusses the obtained results (20 points).

The points are summed up and a standard scale is used to derive the final marks: <50% - 2.0, [50%, 60%) - 3.0, [60%, 70%) - 3.5, [70%, 80%) - 4.0, [80%, 90%) - 4.5, and [90%, 100%) - 5.0.

Laboratory classes: Formative assessment - student realizes the following steps of the project which leads to the business plan for the startup company (60 points). Summary assessment - student presents the business plan (40 points).

Programme content

Students, within the course framework, realize the teamwork project, such as, business plan (based on the Bill Aulet's 24 steps method) for the startup which apply the inventive solution developed by the students.

The lecture schedule includes the following issues:

1. Introduction, incl., startup life cycle, computer scientist career path, the opportunities related with startups, sources of information, notable events, startups culture.
2. Basic methods and tools for inventive thinking. Idea generation. Technology and market analysis and forecasting. Selected methods and tools which support creativity. Brain storming.
3. Lean Canvas concept. Market analysis and market segmentation, beachhead market selection, persona profile.
4. Product design. Quality criteria. The scope, purpose, benefits, target group of the product and product usability, marketing scenario. Prototyping. Design thinking. Heuristic design. Focus group and survey research. Case studies.
5. Business intelligence for analyzing customer behaviors, based on, e.g., Google Analytics.
6. Example of business models. Estimating income and costs. Fixed and variable costs. Margin and markup. Financial analysis and cost-effectiveness evaluation. Accounting liquidity. Break-even point.
7. Marketing. Promotion. Traditional and online advertising. CPM, CPC, CPA models. Social media. Example of marketing communication channels (e.g., AdWords, Facebook). Promotion activities conversion into action and sale.
8. Types of investments. Sources of finance. Business angel, venture capital, public sources, exchange, bonds, loans. Financial and strategic investors. The ways to resign from investment.
9. How to prepare the investment talk, what needs to be included, how to negotiate, how to select the appropriate investors. Rational business decisions. Risk analysis. Psychological Inertia.
10. Soft skills in management. Team motivation. Cooperation and leadership in teamwork.



11. Legal issues. Diverse types of economic activities. Types of partnerships. Statutory duty. Basics of accounting. Intellectual property. Information privacy. Patents.

12. Business plan. Elevator pitch. Presentations. Investors one pager.

13. Case studies: selected companies' history. Big names (e.g., Google, Facebook). The big polish startup. Medium startup from Poznań. Analysis of main mistakes.

Visiting lectures with experienced entrepreneurs or investors might be conducted as a part of the lecture.

Students prepare the project based on the knowledge gained from the lectures and basic literature.

Teaching methods

Lecture: slide show presentations, presentations of case studies, discussions.

Laboratory classes: presentations, student's presentations, discussions, brain-storming.

Bibliography

Basic

1. Bill Aulet, Disciplined Entrepreneurship, Wiley, 2013.

Additional

1. Richard L. Brandt, Jednym kliknięciem. Historia Jeffa Bezosa i rosnącej potęgi Amazon.com, Helion, 2012.

2. David Vise, Google story, Wydawnictwo Dolnośląskie, 2007.

3. Steve Jobs, Isaacson Walter, Insignis Wydawnictwo, 2011.

4. Ries Eric, Metoda Lean Startup. Wykorzystaj innowacyjne narzędzia i stwórz firmę, która zdobędzie rynek, Helion, 2012.

5. Jaszkievicz A., Inżynieria oprogramowania, Helion, 1997.

6. Gadd K., TRIZ for Engineers, Wiley, 2014.

7. Majchrzak, J., Miądowicz, M., Network of Contradictions Analysis in Marketing Information Quality Management, In International TRIZ Future Conference (pp. 307-320). Springer, Cham, 2020.

8. Majchrzak J., Information quality management: a new method of contradiction modelling, Zeszyty Naukowe Politechniki Poznańskiej. Organizacja i Zarządzanie, No. 81, pp. 141-158, 2020.



Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,0
Classes requiring direct contact with the teacher	62	2,5
Student's own work (literature studies, preparation for laboratory classes, preparation for the assessment test, project preparation - solving programming assignments, solving practical exercises) ¹	38	1,5

¹ delete or add other activities as appropriate