OPEN INNOVATION CURRICULUM

Andrej Raspor

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This work is a result of the project: »Youth 4 Open Innovation«.

ACKNOWLEDGEMENTS

»Open Innovation Curriculum« teacher's manual is a result of the project »Youth 4 Open Innovation«, funded by EACEA. The participating countries were: Montenegro, represented by BSC Bar, which is also the lead partner of the project, Bosnia and Hercegovina, represented by INTERA technology park from Mostar, and Slovenia, represented by The Faculty of Applied Social Studies from Nova Gorica.

The starting points for development of the Curriculum were set at the three-day workshop »Preparation of the Curriculum of Open Innovation«, which was due to COVID-19 related restrictions held online via Zoom. The workshop was carried out between 7 and 9 April 2021. Participants of the workshop were the representatives of the youth, economic and academic sector for all three countries. Workshop was hosted by The Faculty of Applied Social Studies from Nova Gorica.

The first part of the workshop − Day 1 was dedicated to the development of the strategies for »Syllabi« and »Curricula«. In the second part of the workshop the participants got acquainted with the concept of open innovation. The second day of the workshop was carried out in groups. First group was composed by the representatives of economic sector who shared their views on the development of »Syllabi« and »Curricula«. The challenge they faced was to find out what the representatives of the economic sector expect from youth in terms of their contribution to the labour market. The second group was composed by the representatives of youth sector who stressed the importance of quality education and skills needed for successful and faster integration of the youth into the labour market. The last group was composed by the representatives of the academic sector. In their view the biggest challenge is how to motivate students for work and study and linking economic and academic sector. Above all, they seek closer cooperation with the economy where students can gain practical knowledge and skills for faster integration into the labour market. Workshop – Day 2 resulted in the outline of the »Open Innovation Syllabus« and »CANVAS for Open Innovation Curriculum«. The last day of the workshop was characterized by interdisciplinary team work where groups were formed based on the geographic makeup of each participating country. The objective was to find out how to implement findings at a national level. Team members made a revision of propositions for »Open Innovation Syllabus« and »CANVAS for Open Innovation Curriculum« regarding national arrangements and the possibilities of its implementation. This was followed by the group discussion and shaping of the final unreviewed version of »Open Innovation Syllabus« and »CANVAS for Open Innovation Curriculum«.

After the workshop the participants made a revision and provided a clean copy. The representatives of the academic sector prepared »Open Innovation Syllabus«, which will be approved and implemented by »The Faculty of Natural sciences, Mathematics and Education, University of Mostar«, »Faculty of Business, Economics and Law, Bar, Montenegro« and »Faculty of Applied Social Studies, Nova Gorica«. Syllabi are written in English and national languages.

This manual is based on »Open Innovation Syllabus« and »CANVAS for Open Innovation« and was designed to enable teachers and students to work smoothly. The manual is available in four languages. Besides English, there is also Slovenian, Bosnian and Montenegrin version. This manual is first and foremost intended for teachers of open innovation course and its participants. However, since this manual is freely accessible, it can be used by anyone interested in the topic.

This manual was designed following the principles of open innovation. A special thanks goes to all the participants involved who actively contributed to the development of this manual.

ABOUT THE AUTHOR

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Assoc. Prof. Andrej Raspor (1965) Ph.D. In terms of his basic education, he is a mechanical engineering technician. After graduating in organisation of work at the Faculty of Organizational Sciences in Kranj that is part of University of Maribor, he continued his post-graduate studies at the Faculty of Social Sciences of the University of Ljubljana and received his PhD in 2010. In terms of his work, he combines business and academic work since he is a lecturer, the director of his own company and a business consultant. Mr. Raspor has more than 36 years of work experience, of which for more than 17 years he has been in various top positions; head of general administration, director of human resources development, director of strategic projects and head of the expense supervision commission. Research works: Employment relationships and processes with a focus on optimisation of work processes both in terms of costs and organisation of working time; Tourism with a focus on Chinese outbound tourism, Tourism for people with special needs and sustainable tourism; Open innovations; Gambling. He has conducted several bilateral projects (in terms of The Slovenian Research Agency) and takes part in Intereg Europe projects.

He speaks Slovenian, English and also Italian, Bosnian/Croatian/Serbian/Montenegrin language (Latin alphabet).

Follow the links below to learn more:

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BSC BAR · FUDŠ FAKULTETA ZA UPORABNE DRUŽBENE ŠTUDIJE · INTERA technology park · Co-funded by the Erasmus+ Programme of the European Union · YOUTH 4 OPEN INNOVATION

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INTRODUCTION TO OPEN INNOVATION CURRICULUM

Figure 1: Students learning online

1. HOW TO USE THIS MANUAL

1.1 Icons used in this manual

The following icons will be introduced as you progress through the manual:

	Teaching methods

	References
(A)	This icon will be used for theoretical library material and articles. All the references are cited in APA style which helps the students to easily locate the source in their library.
(B)	This icon will be used for online sources. For ease of reference and transparency, we provide only a link to the site from which the article originated. In case the link does not work, find a related source by the title of the topic.
(C)	This icon will be used for video material, including the link to the video and video length. In case the video has been removed (quite common issue on YouTube) find the video by title.
(D)	This icon will be used for guest lecture.
(E)	This icon will be used for internet sources which students find independently.

Group work

Independent work

Case study

Company visit

Assessment methods

1.2 For whom is this manual intended?

This Curriculum is first and foremost designed for teachers of open innovation course. However, since this manual is freely accessible, it can be used by anyone interested in the topic. Furthermore, this manual was set very ambitiously. In building their course, teachers themselves decide, depending on study level, how in-depth they will study the content inside the class and which themes should students study independently.

1.3 Goals to pursue

This manual aims at moving students toward the achievement of educational goals and meeting course learning objectives for each specific course. (The learning expectations for each grade level build upon previous expectations as students progress from one level to the next.) In addition to that, it helps students develop the following competencies:

- **cognitive** – the ability to process and acquire knowledge and understanding through thought, reasoning, experience, intuition, perception, imagination;

- **functional –** the ability to use systems, methods, tools (intellectual, linguistic, communication, technical) to perform specific activity on a personal or professional level;
- **personal, social and ethical** – the ability to understand, regulate and control one's behaviour in concrete situations (to assess and understand a particular situation, conflict resolution skills based on moral values – e.g., business behaviour).

To explain the teaching-learning process we adopted Bloom's digital taxonomy:

	Remembering: Students would be able to define, duplicate, list, memorize, recall, repeat, reproduce, or state.

	Understanding: Students would be able to classify, describe, discuss, explain, identify, locate, recognize, report, select, translate, or paraphrase.

	Applying: Students would be able to choose, demonstrate, dramatize, employ, illustrate, interpret, operate, sketch, solve, use, or write.

	Analysing: Students would be able to compare, contrast, criticize, differentiate, discriminate, distinguish, examine, experiment, question, or test.

	Evaluating: To evaluate information, a student might: appraise, argue, defend, judge, select, support, value, and evaluate.

	Creating: Students would be able to assemble, construct, create, design, develop, formulate, write, or invent.

Figure 2: Bloom's Taxonomy
https://www.edweek.org/education/opinion-heres-whats-wrong-with-blooms-taxonomy-a-deeper-learning-perspective/2018/03

Bloom's digital taxonomy (designed by Andrew Churches) is a powerful tool to frame teaching and learning. It helps educators and teachers use digital tools and technology to facilitate student learning process. The list of measurable verbs, which describe cognitive processes of a student, assists teachers in lesson planning, criteria setting, analysing and evaluating syllabi.

The pyramid graphic below represents the six levels of Bloom's Digital Taxonomy, ranging from lower-order thinking skills on the left (remembering) to higher-order thinking skills on the right (creating). Bloom's Digital Taxonomy pyramid provides action verbs for each level of the cognitive process dimension. Some action verbs may be used in multiple levels, depending upon context.
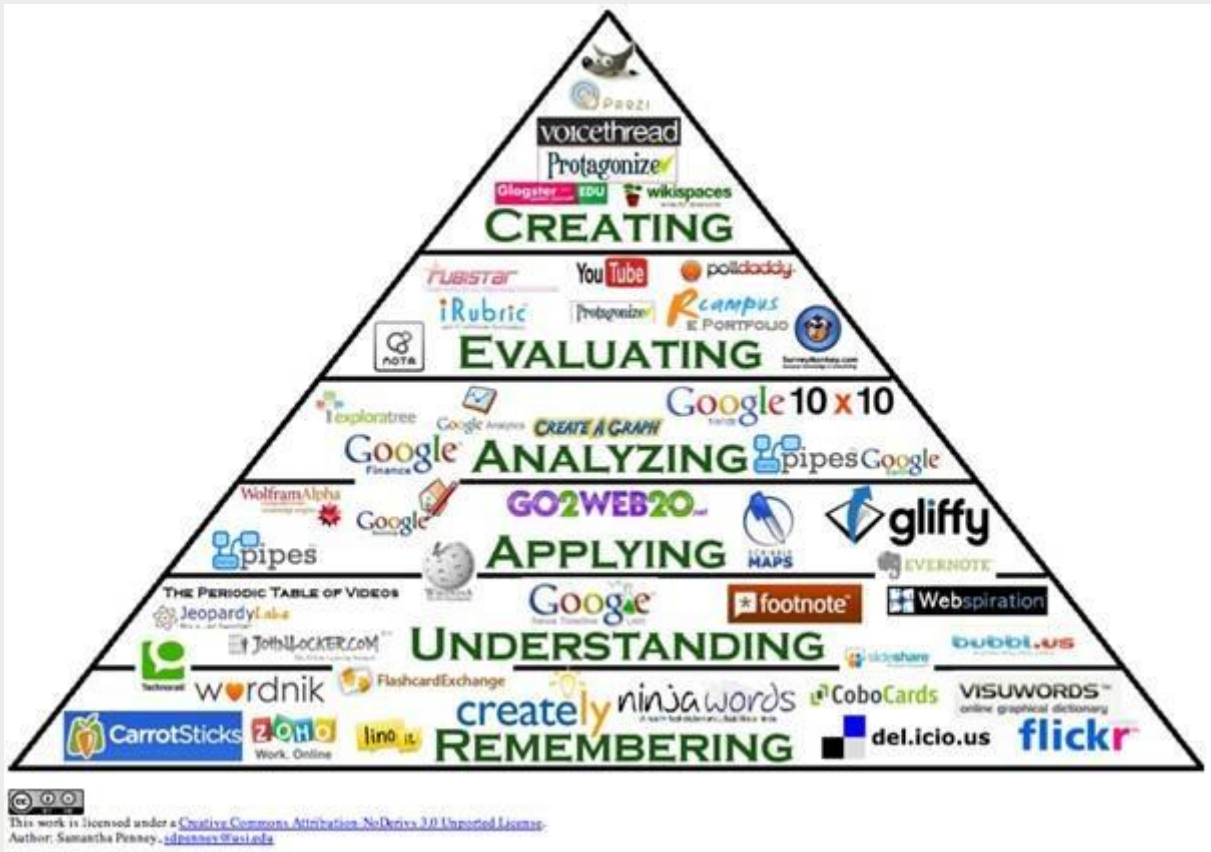
Figure 3: Bloom's Digital Taxonomy

Which levels will you incorporate into your teaching plans largely depends on how you organized your lessons. In this manual we provide some tips and ideas on how to make your lectures and tutorials run smoothly.

Use the verbs and phrases below to enrich and shape the tutorials given in this manual and to provide the students with a clearer understanding of what is expected of them. It is up to teacher to decide what to use as part of his/her lectures and tutorials.

Figure 4: Bloom's Digital Taxonomy
(http://coachescorner.rchk.edu.hk/bloomhots.html)

2. OBJECTIVES

	Curriculum aims:

- Students get familiar with the content and concept of open innovation.
- Students gain understanding of the role and importance of open innovation.
- Students understand the importance of motivation and the ability to motivate themselves and others.
- Students develop critical thinking and problem-solving skills.
- Students gain the ability to recognize and implement innovative solutions.
- Students learn the importance of communication and networking.

3. LEARNING OUTCOMES

	By the end of this curriculum the students will be able to:

- Apply the concept of open innovation in all spheres of business as well as in personal life.
- Use motivation techniques for the development of the open innovation concept and to put this knowledge into practice.
- Analyse and use critical thinking for problem solving.
- Recognize and implement innovative solutions.
- Use the potential of networking and modern methods of communication.

4. COMPETENCIES

	By the end of this unit the students will develop new competencies which will help them to:

- Recognize the importance of improving, updating and deepening their knowledge.
- Recognize the importance of change and innovation in business environment.
- Apply the acquired knowledge, collaborate and work in teams (innovative teamwork).
- Solve concrete work-related issues using innovative methods and procedures.

- Understand innovation, develop skills to search for and accurately evaluate innovative ideas, and to draw up commercialization plan.
- Explain the phases, risks and challenges related to the growth of business, in particular highly innovative companies.
- Understand the importance of networking and intellectual property rights in terms of technology and innovation management.
- Understand innovation management and new product/service development process until the product enters the market, supported by the evaluation of commercial potential of new product, technology transfer and open innovation opportunities for business growth.

5. KNOWLEDGE AND UNDERSTANDING

Students will demonstrate newly developed competencies through their:

- Ability to identify innovative idea with potential.
- Ability to describe all the phases of the innovation process as well as its context at the micro- and macro- levels.
- Ability to understand and distinguish improvements, novelty, inventions, innovations, and patent invention.
- Ability to recognize and select resources (human, technological ...), ability to choose the right timing and place for a product launch as key factors to successful development and realization of idea.
- Ability to identify risks associated with the realization of invention and innovation, communication and networking with investors in the area of financing of innovations.
- Ability to act as an innovation promoter in open innovation processes.
- Ability to identify external sources of innovation.
- Ability to analyse the innovation needs of a company.
- Ability to apply methods of open and user innovation to reflect upon what strategies, structures and processes companies need to change in order to move forward in open innovation processes.

6. ACTIVITIES

The course will include the following activities:

- Lectures with active participation of students (presenting course material, discussion, questions, examples, problem solving).
- Practice-based tutorials (reflecting on experience, project work, teamwork, critical thinking, discussion, feedback, social games, excursion).
- Individual and group consultations (interviews, additional explanation, specific questions).
- Use of online classroom or other contemporary ICT tools.
- Facilitating independent study and research (motivation, guidance, self-observation, self-regulation, reflection, self-assessment).
- Practical training.
- Company visits.
- Working on a project.

7. TECHNOLOGIES
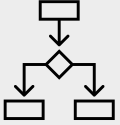
List of useful technologies:

Work on technologies that are available in the business environment (to deliver work-ready graduates)
- Excel;
- Google drive;
- Miro;
- Slack (communication);
- Trello (project management);
- Asana (project management);
- Canva;
- Prezzi;
- Bitable
- Windows Remote Desktop
- TeamViewer
- Moodle
- Zoom
- Microsoft Teams
- We transfer
- Dropbox

- Google Drive
- OneDrive

If your working environment allows you, encourage students to:
- Participate in competitions.
- Attend and participate in hackathon.
- Join student-run business club.
- Participate in innovation lab (Q5).

8. PROCEDURE

Procedure:

- From general to concrete.
- From theory to practice.
- Review of the theory and solidifying students' learning with concrete examples.
- Introducing methods of critical thinking.
- Group formation.
- Working on team projects.
- Cooperating with companies and looking for solutions.

More detailed information on procedure is provided in the description of each individual assignment!

9. LIMITATIONS

The challenges you will face while teaching:

- Lack of commitment and motivation in students.
- Creating a culture of innovation to facilitate knowledge transfer.
- Low interest in industry to engage with academia.
- University's capability to collaborate with industry.
- Readiness for innovative work behaviour within the public sector.
- Limited access to the latest literature and case studies.

It's important to know your limitations in advance and make sure these limitations don't hinder teaching and learning process.

10. ASSESSMENT METHODS

Here is a list of methods to assess students' knowledge:

- Written/oral exam.
- Empirical seminar reports and presentations of project work tasks.
- Participation in lectures and tutorials.

I.   MANAGEMENT AND QUALITY THEORIES

Figure 5: Chess

1. DEVELOPMENT OF MANAGEMENT

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.
- Drawing conclusions and preparing students for assessments.

	References

- (A) Coulter, M. K., DeCenzo, D. A. and Robbins, S. P. (2017). *Fundamentals of management.* Pearson Boston, MA.
- (B) Development of Management Theory https://www.toppr.com/guides/business-management-and-entrepreneurship/nature-of-management-and-its-process/development-of-management-theory/
- (C) Management Timeline https://www.youtube.com/watch?v=Hzbv6Ud8Mcs (17:10);
- (C) What Are the Five Functions of Management https://www.youtube.com/watch?v=_NV7y6E4Ibk (05:57);
- (C) What is organizational structure? https://www.youtube.com/watch?v=wO_-MtWejRM (02:27)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.
- Assessment of presentation.

2. MANAGEMENT THEORIES

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Students work in groups on the videos provided by teacher (C) and prepare a short (up to 30 seconds) presentation.
- Participants exchange their opinions and views.

	References

- (A) Coulter, M. K., DeCenzo, D. A. and Robbins, S. P. (2017). *Fundamentals of management*. Pearson Boston, MA.
- (B) Management Theories: Concepts surrounding recommended management strategies https://corporatefinanceinstitute.com/resources/careers/soft-skills/management-theories/
- (C) Taylorism on ABC World Report https://www.youtube.com/watch?v=CCsOqWbK46o (04:48)
- (C) Fayol's Management Principles https://www.youtube.com/watch?v=DsYcnapehvA (7:32)
- (C) Max Weber Bureaucracy: https://www.youtube.com/watch?v=zp554tcdWO8 (09:52)
- (C) Behaviorism https://www.youtube.com/watch?v=R4kDmkXwU2k (01:54)
- (C) The Little Albert Experiment https://www.youtube.com/watch?v=9hBfnXACsOI (06:20)
- (C) Hawthorne Studies: https://www.youtube.com/watch?v=W7RHjwmVGhs (06:07)
- (C) McGregor's Theory X & Y https://www.youtube.com/watch?v=NK8-LhqF4N0 (05:05)
- (C) Theory Z https://www.youtube.com/watch?v=5VIG-2WJcsQ (03:08)
- (C) HR Basics: Human Resource Management https://www.youtube.com/watch?v=A2HFusWQIeE (06:05)
- (C) Likert's four systems of management https://www.youtube.com/watch?v=bdxpU_n2VJg (03:39)
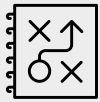
	Assessment methods
	- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam. - Peer assessment[1]. - Presentation assessment[2].

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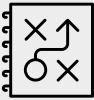
[1] See attached: Peer assessment questionnaire
[2] See attached: Indicators − seminar papers

3. KNOWLEDGE MANAGEMENT

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) provided by teacher and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.
- Drawing conclusions and preparing students for assessments.

	References

- (A) Ermine, J. L. and Saulais, P. (2019). Knowledge Management in Innovative Companies 1: Understanding and Deploying a KM Plan within a Learning Organization. John Wiley & Sons.
- (A) Ermine, J. L. and Saulais, P. (2020). Knowledge Management in Innovative Companies 2: Understanding and Deploying a KM Plan within a Learning Organization. John Wiley & Sons.
- (B) A case study on the implementation of a knowledge management strategy oriented to innovation https://www.researchgate.net/publication/229608830

	Assessment methods

- Essay exam, focusing on theory – written as a colloquium at the end of each chapter or as final exam.
- Presentation assessment.

4. ENTREPRENEURIAL MANAGEMENT

Teaching methods
Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Students discuss best practices in local development (B). • Lectures or round table with local entrepreneur guest (D). • Participants exchange their opinions and views. • Drawing conclusions and preparing students for assessments.

References
• (A) Hisrich, R. D. and Ramadani, V. (2017). Effective entrepreneurial management. Strategy, Planning, Risk. • (B) Website address of successful companies in the local area and other useful information available. • (D) Guest lecture.

Assessment methods
• Group presentation of practical application of a business model.

5. STRATEGIC ASPECTS OF TECHNOLOGICAL DEVELOPMENT

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Teacher and students watch a video (B).
- Article analysis (C).
- Participants exchange their opinions and views.

	References

- (A) Knowledge, technology and development: a conceptual framework
  http://hdr.undp.org/sites/default/files/sagasti-1-1.pdf
- (B) Holionko, N. G., Ivanova, A. S., Olejarz, T., Tverdushka, T. B. and Yakymchuk, A. Y. (2019). The Strategic Management in Terms of an Enterprise's Technological Development. Journal of Competitiveness, 11(4), 40.
  https://www.cjournal.cz/files/344.pdf
- (C) The 25 Biggest Technology Trends 2020 – 2030
  https://www.youtube.com/watch?v=6JOhemCj5Cs (08:10)

	Assessment methods

- Teacher assesses students' progress during guided practice.

6. TOTAL QUALITY MANAGEMENT

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) provided by teacher and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Charantimath, P. M. (2009). Total Quality Management/Poornima M. Charantimath. Delhi: Dorling Kindersley.
- (B) What is total quality management (TQM)? https://asq.org/quality-resources/total-quality-management
- (C) Total Quality Management https://www.youtube.com/watch?v=YKwcxjUnots (08:45)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.

II.   INNOVATION THEORIES

Figure 6: Marker

1. INTRODUCTION TO INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.
- Drawing conclusions and preparing students for assessments.
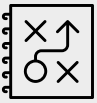
	References

- (A) Laverty, M. and Littel, C. (2020). [eTextbook] Entrepreneurship.
- (B) Innovation: Definition, types of innovation and business examples https://youmatter.world/en/definition/definitions-innovation-definition-types-examples/
- (B) Types of Innovation https://techblog.constantcontact.com/software-development/types-of-innovation/
- (C) Introduction to Innovation https://www.youtube.com/watch?v=rLA-vVLNvws (4:17)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.
- Presentation assessment.

2. DEFINITIONS OF INNOVATION TERMS (INVENTION, INNOVATION …)

Teaching methods
Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Students work in teams on internet source (B) that teacher provides and prepare a short presentation. • Students analyse legislation and Intellectual Property Office. • Participants exchange their opinions and views.

References
• (A) Laverty, M. and Littel, C. (2020). [eTextbook] Entrepreneurship. • (B) What is Innovation? https://innolytics-innovation.com/what-is-innovation/ • (B)Creativity, Innovation, and Invention: How They Differ https://openstax.org/books/entrepreneurship/pages/4-2-creativity-innovation-and-invention-how-they-differ • (E) National and supranational legislation. • (E) Intellectual Property Office.

Assessment methods
• Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam. • Teacher assesses students' progress during guided practice. • Presentation assessment.

3. BASICS OF INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students search the internet for world's most famous innovators (E).
- Participants exchange their opinions and views.

	References

- (B) Innovation: the basics https://www.business.qld.gov.au/running-business/growing-business/becoming-innovative/basics
- (E) World Wide Web.

	Assessment methods

- Teacher assesses students' progress during guided practice.

4. OPEN SYSTEM AND CLOSED SYSTEM OF INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Chesbrough, H. W. (2003a). Open innovation: The new imperative for creating and profiting from technology. Harvard Business Press.
- (A) Chesbrough, H. W. (2003b). Open innovation. Boston: Harvard Business School Press.
- (A) Chesbrough, H. W., Vanhaverbeke, W. and West, J. (2006). Open innovation: Researching a new paradigm. Oxford University Press on Demand.
- (B) Innovation & Entrepreneurship - From Basics to Open Innovation https://www.coursera.org/learn/open-innovation-entrepreneurship
- (C) What is Open Innovation? https://www.youtube.com/watch?v=GD2wCS2xwWQ (04:11)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.
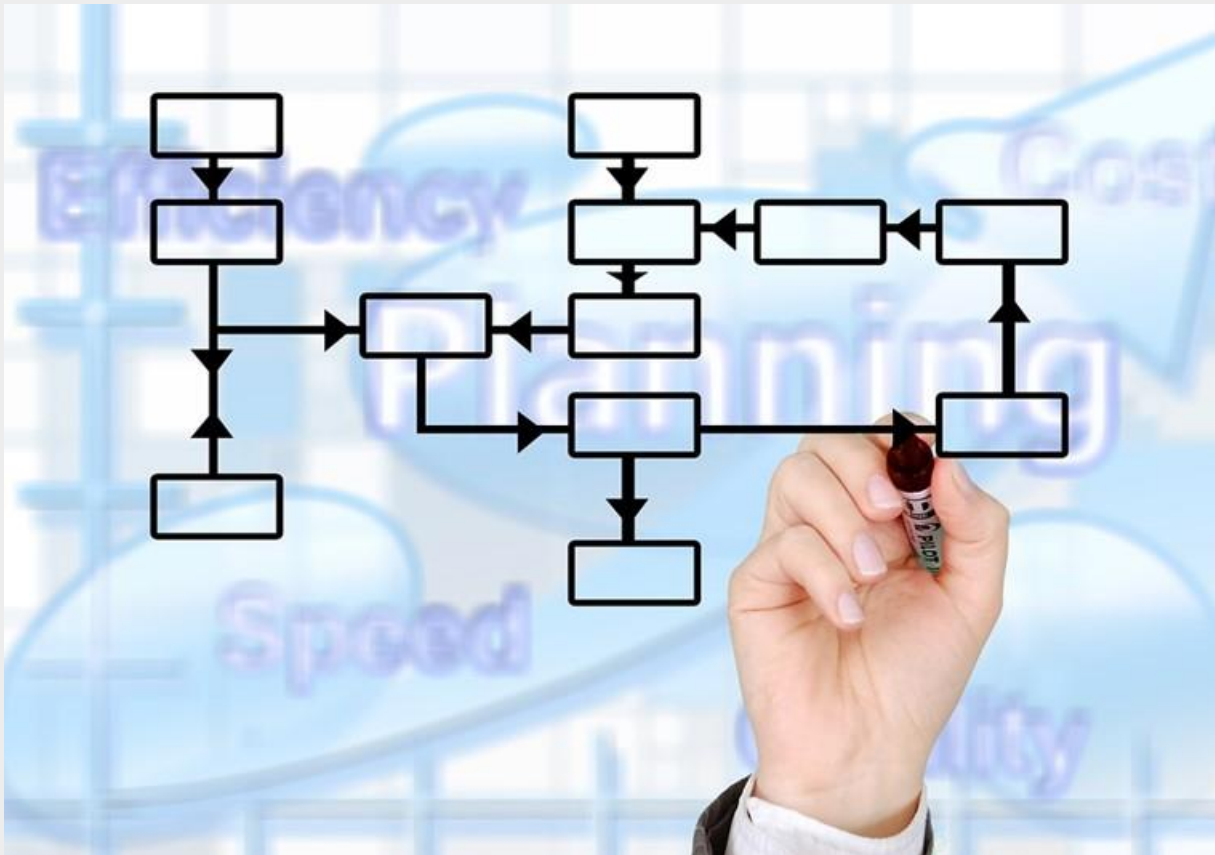- Teacher assesses students' progress during guided practice.

III. THE INNOVATION CULTURE
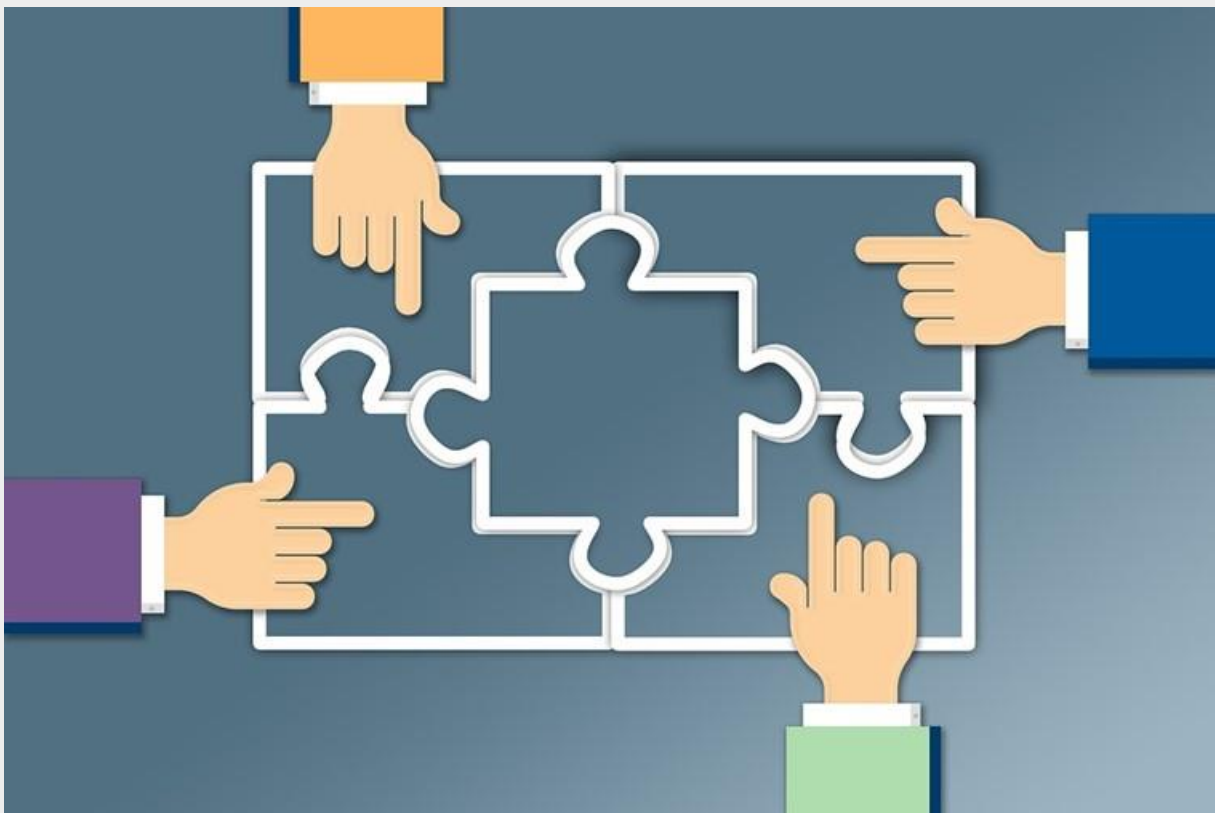
Figure 7: Hands

1. VISION, MISSION AND VALUES

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Coulter, M. K., DeCenzo, D. A. and Robbins, S. P. (2017). *Fundamentals of management.* Pearson Boston, MA.
- (B) Principles of Management https://open.lib.umn.edu/principlesmanagement/chapter/4-3-the-roles-of-mission-vision-and-values/
- (C) The Mission, Vision, and Values statements https://www.youtube.com/watch?v=8wem6FZAucw (5:57)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.

2. ORGANIZATIONAL CULTURE

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Schein, E. H. (2004). Organizational culture and leadership (Jossey-Bass business & management series). Jossey Bass Incorporated.
- (B) Organizational Culture: Definition, Importance, and Development https://www.achievers.com/blog/organizational-culture-definition/
- (C) What is Organizational Culture? https://www.youtube.com/watch?v=4cBN8xH-5Qw (4:23)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.

3. LEARNING ORGANIZATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Lectures or round table with HRM representative from local company (D).
- Participants exchange their opinions and views.

	References

- (A) Senge, P. M. (1995). Learning organizations. Cambridge: Gilmour Drummond Publishing.
- (B) What Is a Learning Organization?
- https://www.convergencetraining.com/blog/what-is-a-learning-organization
- (C) The Learning Organization: Is Your Company Ready for the Future? https://www.youtube.com/watch?v=40meQNZl3KU (4:02)
- (D) Guest from practice.

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.

4. SCIENTIFIC AND TECHNOLOGICAL REVOLUTION AND EXPLOSION OF KNOWLEDGE AND INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Frey, C. B. (2019). The technology trap. Princeton University Press.
- (B) The knowledge explosion and the knowledge divide
  http://hdr.undp.org/sites/default/files/sagasti-1-1.pdf
- (C) 101 The Explosion of Knowledge
  https://www.youtube.com/watch?v=uSeDNnVpvcQ (2:00)

	Assessment methods

- Teacher assesses students' progress during guided practice.

IV. INNOVATION SYSTEM BREAKDOWN

Figure 8: Working in a group

1. INNOVATION PROCESS BREAKDOWN

Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

References

- (A) Christensen, C. M. (2013). The innovator's dilemma: when new technologies cause great firms to fail. Harvard Business Review Press.
- (B) The 4 phases of innovation https://www.lead-innovation.com/english-blog/the-4-phases-of-innovation
- (C) Innovation 5 Step Process https://www.youtube.com/watch?v=N70RK3_zXhc (5:53)

Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.

2. CONTENT INNOVATION

Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

References

- (A) Keeley, L., Pikkel, R., Quinn, B. and Walters, H. (2013). Ten types of innovation: The discipline of building breakthroughs. John Wiley & Sons.
- (B) Understanding Open-Source and Free Software Licensing https://moqod.com/understanding-open-source-and-free-software-licensing/
- (B) What types of innovation are there? https://www.lead-innovation.com/english-blog/types-of-innovation
- (C) 5 Types of Innovation https://www.youtube.com/watch?v=jNoYwJiL6mw (2:39)

Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.

3. TYPES OF INNOVATION ACCORDING TO THE TECHNOLOGY IT USES AND THE IMPACT IT HAS

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Keeley, L., Pikkel, R., Quinn, B. and Walters, H. (2013). Ten types of innovation: The discipline of building breakthroughs. John Wiley & Sons.
- (B) Types of Innovation – The Ultimate Guide with Definitions and Examples https://www.viima.com/blog/types-of-innovation
- (B) The 40 Greatest Innovations of All Time http://startupguide.com/world/the-40-greatest-innovations-of-all-time/
- (C) What is Innovation? https://www.youtube.com/watch?v=A3fvWpGk-Ao (1:36)
- (C) Innovation Definition: What Is A Technological Innovation And What Are Some Innovation Examples? https://www.youtube.com/watch?v=zfmbg0ytQ5s (14:20)

	Assessment methods

- Teacher assesses students' progress during guided practice.
- Presentation assessment.

4. TYPES OF INNOVATION ACCORDING TO THE SOURCE

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Keeley, L., Pikkel, R., Quinn, B. and Walters, H. (2013). Ten types of innovation: The discipline of building breakthroughs. John Wiley & Sons.
- (B) What is business innovation and why is it important? https://www.wework.com/ideas/growth-innovation/what-is-business-innovation
- (B) Personal Innovation: Igniting Dreams, Passions, Careers and Social Impact https://blog.shrm.org/sasia/blog/personal-innovation-igniting-dreams-passions-careers-and-social-impact
- (C) 10 types of innovation: https://www.youtube.com/watch?v=JGQQEg5ZQ7Q (7:40)

	Assessment methods

- Teacher assesses students' progress during guided practice.

5. TYPES OF INVENTIONS

Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

References

- (A) Christensen, C. M. (2013). The innovator's dilemma: when new technologies cause great firms to fail. Harvard Business Review Press.
- (B) Invention and innovation: an introduction https://www.open.edu/openlearn/ocw/mod/oucontent/view.php?id=3440&printable=1
- (B) Types of legal categories of innovation results; patent, model, brand, licence. https://www.legalmatch.com/law-library/article/types-of-patent-infringement.html
- (C) What's the difference between invention and innovation? https://www.youtube.com/watch?v=kg8WjcC2KTw (10:17)

Assessment methods

- Teacher assesses students' progress during guided practice.

6. INTELLECTUAL PROPERTY PROTECTION

Teaching methods
Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Students work in teams on internet source (B) that teacher provides and prepare a short presentation. • Teacher and students watch a video (C). • Analysis of local infrastructure (E). • Participants exchange their opinions and views.

References
• (A) Christensen, C. M. (2013). The innovator's dilemma: when new technologies cause great firms to fail. Harvard Business Review Press. • (B) The protection of intellectual property https://www.eesc.europa.eu/sites/default/files/files/factsheet_-_the_protection_of_intellectual_property_0.pdf • (C) How to Protect Your Idea (The 4 Different Types of Intellectual Property): https://www.youtube.com/watch?v=QaYzwU1nV8E (5:33) • (E) National Intellectual Property Office.

Assessment methods
• Teacher assesses students' progress during guided practice. • Presentation assessment.

V. INNOVATIVE CHANGES AND LEARNING

Figure 9: Creative ideas

1. DEFINING PROBLEMS AND CHALLENGES IN EVERYDAY LIFE

	Teaching methods
	Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Students work in teams on internet source (B) that teacher provides and prepare a short presentation. • Participants exchange their opinions and views.

	References
	• (B) 70 Everyday Problems That We All Know And Hate https://www.awesomeinventions.com/everyday-problems/ • (B) How to Solve Daily Life Problems https://www.anxietycanada.com/articles/how-to-solve-daily-life-problems/ • (B) 100 Genius Solutions To Everyday Problems You Didn't Know Existed https://www.boredpanda.com/creative-solutions-everyday-problems/?utm_source=google&utm_medium=organic&utm_campaign=organic

	Assessment methods
	• Teacher assesses students' progress during guided practice.

2. TEAM APPROACH DURING INNOVATION PROCESS

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Participants exchange their opinions and views.

	References

- (A) Stewart, G. L. (1999). Team work and group dynamics (No. 658.4036 S8).
- (B) Addressing the Paradox of the Team Innovation Process: A Review and Practical Considerations
  https://www.researchgate.net/profile/Amanda-Thayer-3/publication/323768440
- (B) How to Build an Effective Innovation Team
  https://www.northeastern.edu/graduate/blog/how-to-build-innovation-team/
- (C) Understanding Group Dynamics https://www.youtube.com/watch?v=uL6x99-VSBA (10:33)

	Assessment methods

- Teacher assesses students' progress during guided practice.

3. PROJECT APPROACH DURING INNOVATION PROCESS

Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

References

- (A) Heagney, J. (2016). Fundamentals of project management. AMACOM.
- (B) The Management of Innovation in Project-Based Firms https://www.researchgate.net/publication/222575326_The_Management_of_Innovation_in_Project-Based_Firms
- (C) Project Management in under 8 minutes: https://www.youtube.com/watch?v=qkuUBcmmBpk (7:43)
- (C) Introduction to Project Management: https://www.youtube.com/watch?v=rBSCvPYGnTc (31:27)

Assessment methods

- Teacher assesses students' progress during guided practice.

4. INNOVATION TRAINING

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Kodwani, A. D. and Noe, R. A. (2018). Employee training and development, 7e. McGraw-Hill Education.
- (B) How innovation training can transform your organization https://online.hbs.edu/blog/post/innovation-training
- (B) What should you know when organizing innovation training? https://www.viima.com/blog/what-should-you-know-when-organizing-innovation-training
- (B) Innovation Competence https://ampersand.vc/grow-your-innovation-capabilities/
- (C) The Importance of Open Innovation and Collaboration: https://www.youtube.com/watch?v=05QZQIf8mPg (12:27)
- (C) Lecture on Open Innovation: https://www.youtube.com/watch?v=gLsNQ0yjdNo (32:36)

	Assessment methods

- Teacher assesses students' progress during guided practice.

5. REWARDING INNOVATORS

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Armstrong, M. (2002). Employee reward. CIPD Publishing.
- (B) 15 Ideas for Rewarding Innovation in the Workplace https://www.thesuccessfactory.co.uk/blog/11-ideas-for-rewarding-innovation-in-the-workplace
- (C) Rewarding Innovation 15 Ideas for Rewarding Innovation in the Workplace: https://www.creativejeffrey.com/creative/rewards.php?topic=creative
- (C) Motivation Theories Explained in 10 Minutes: https://www.youtube.com/watch?v=woa2Qa8i80U (10:51)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.
- Teacher assesses students' progress during guided practice.

VI. OPEN INNOVATION PROCESSES
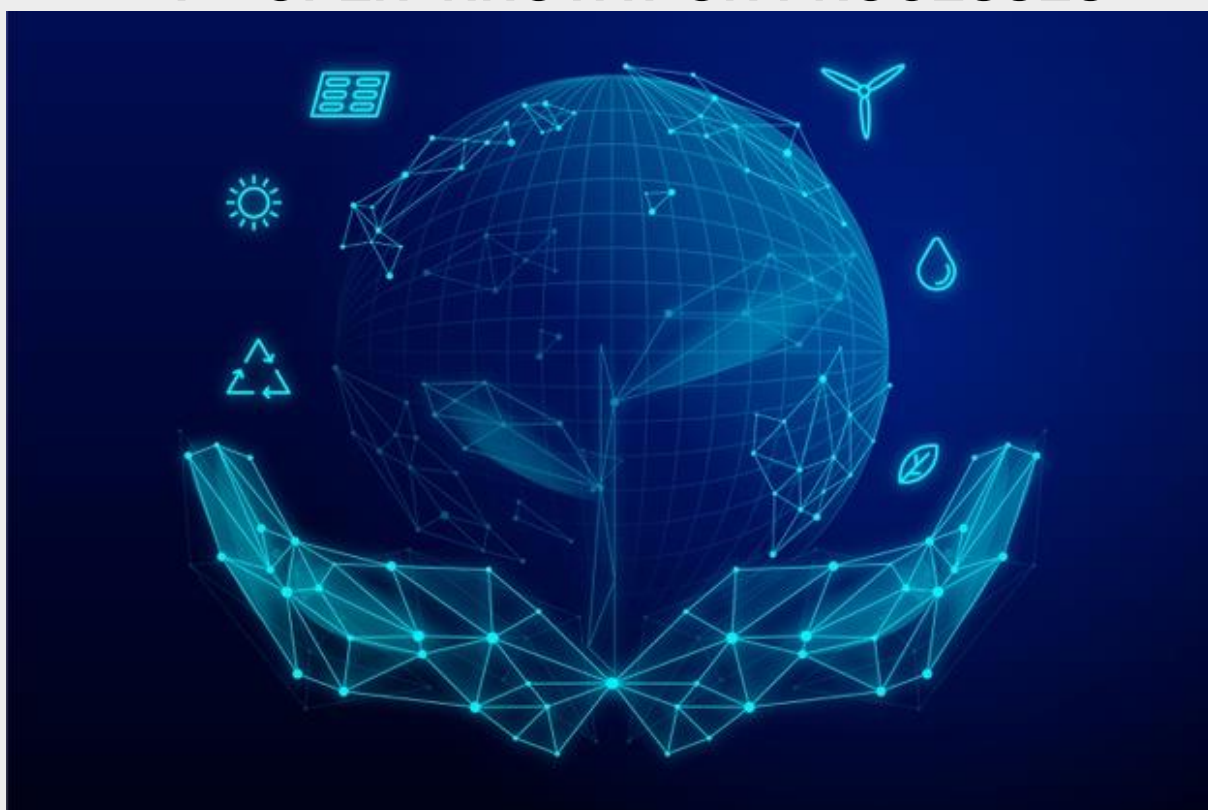
Figure 10: Technological ecology concept

1. INTRODUCING OPEN INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Chesbrough, H. W. (2003a). Open innovation: The new imperative for creating and profiting from technology. Harvard Business Press.
- (A) Chesbrough, H. W. (2003b). Open innovation. Boston: Harvard Business School Press.
- (B) Introducing Open Innovation
https://www.innoget.com/open-innovation-definition
- (C) Open Innovation 01 – Wheel: https://www.youtube.com/watch?v=-G6yaxH1Cis (8:14)
- (C) Open Innovation 02 - What is "open innovation"?
https://www.youtube.com/watch?v=-G6yaxH1Cis (7:52)
- (C) Open Innovation 03 - Blue Ocean Strategy
https://www.youtube.com/watch?v=_ArXF2Kspjo&t=25s (13:37)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.
- Teacher assesses students' progress during guided practice.
- Presentation assessment.

2. OPEN INNOVATION PARADIGM

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Chesbrough, H. W. (2003a). Open innovation: The new imperative for creating and profiting from technology. Harvard Business Press.
- (A) Chesbrough, H. W. (2003b). Open innovation. Boston: Harvard Business School Press.
- (A) Chesbrough, H. W., Vanhaverbeke, W. and West, J. (2006). Open innovation: Researching a new paradigm. Oxford University Press on Demand.
- (B) Open innovation Accelerating your innovation results https://www.ennomotive.com/open-innovation
- (C) Open Innovation Platform | What is the OIP? | An initiative of IMDA https://www.youtube.com/watch?v=ptZUdV8WyfA (2:05)

	Assessment methods

- Teacher assesses students' progress during guided practice.

3. TRIPLE HELIX, QUADRUPLE HELIX, AND QUINTUPLE HELIX

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Acikdilli, G., Carayannis, E. G. and Ziemnowicz, C. (2020). Creative destruction in international trade: insights from the quadruple and quintuple innovation Helix models. Journal of the Knowledge Economy, 11(4), 1489-1508.
- (B) Quadruple and quintuple innovation helix framework https://en.wikipedia.org/wiki/Quadruple_and_quintuple_innovation_helix_framework
- (B) The Quintuple Helix innovation model: global warming as a challenge and driver for innovation https://innovation-entrepreneurship.springeropen.com/articles/10.1186/2192-5372-1-2
- (B) The Quintuple Helix innovation model: global warming as a challenge and driver for innovation https://www.researchgate.net/publication/273268696_Triple_Helix_Quadruple_Helix_and_Quintuple_Helix_and_How_Do_Knowledge_Innovation_and_the_Environment_Relate_To_Each_Other
- (C) Successful participation in Quadruple helix co-creation in good governance: https://www.youtube.com/watch?v=Tceg30hwDx8 (5:56)

	Assessment methods

- Group presentation of practical application of a business model.
- Presentation assessment.

4. COMPANY'S GOALS TO FOSTER COLLABORATION AND OPEN INNOVATION MODELS

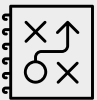|	**Teaching methods**

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Ahonen, M., Antikainen, M. and Mäkipää, M. (2010). Motivating and supporting collaboration in open innovation. European Journal of Innovation Management.
- (B) The open innovation model https://www.iccwbo.be/wp-content/uploads/2012/03/20140325-The-Open-Innovation-Model.pdf
- (C) Open Innovation And Crowdsourcing: https://www.youtube.com/watch?v=jzjLOBsQ57k (5:03)

	Assessment methods

- Teacher assesses students' progress during guided practice.

VII. OPEN INNOVATION METHODS AND TOOLS
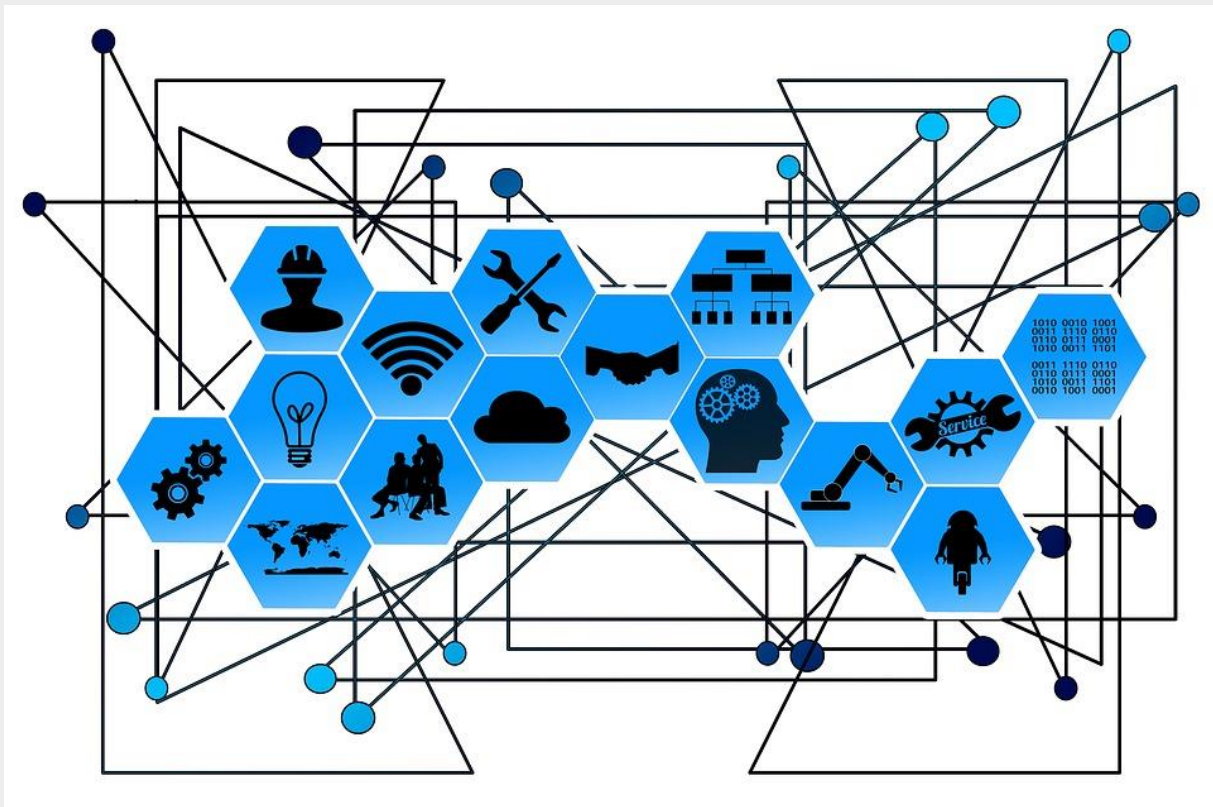
Figure 11: Networks

1. OPEN SOURCE AND LEAD USERS IN INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Chesbrough, H. W. (2003a). Open innovation: The new imperative for creating and profiting from technology. Harvard Business Press.
- (A) Chesbrough, H. W. (2003b). Open innovation. Boston: Harvard Business School Press.
- (A) Chesbrough, H. W., Vanhaverbeke, W. and West, J. (2006). Open innovation: Researching a new paradigm. Oxford University Press on Demand.
- (B) Open Innovation and Lead User Innovation https://www.eoi.es/blogs/lauraambros/2012/02/09/open-innovation-and-lead-user-innovation/
- (C) What is User innovation? Explain User innovation, Define User innovation, Meaning of User innovation: https://www.youtube.com/watch?v=xxBEkf7gte8 (3:46)
- (C) Open Innovation vs. Open Source https://www.youtube.com/watch?v=yh0dq-XSJNY (1:29)

	Assessment methods

- Teacher assesses students' progress during guided practice.

2. CROWDSOURCING THEORY AND PRACTICE

	Teaching methods
	Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Students work in teams on internet source (B) that teacher provides and prepare a short presentation. • Teacher and students watch a video (C). • Participants exchange their opinions and views.

	References
	• (A) Brabham, D. C. (2013). Crowdsourcing. Mit Press. • (B) Crowdsourcing https://www.investopedia.com/terms/c/crowdsourcing.asp • (C) What is Crowdsourcing? https://www.youtube.com/watch?v=AkwhUOQ3nYg (2:02)

	Assessment methods
	• Teacher assesses students' progress during guided practice.

3. CHOOSING THE RIGHT OPEN INNOVATION TOOL

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Participants exchange their opinions and views.

	References

- (A) Chesbrough, H. W. (2003a). Open innovation: The new imperative for creating and profiting from technology. Harvard Business Press.
- (A) Chesbrough, H. W. (2003b). Open innovation. Boston: Harvard Business School Press.
- (A) Chesbrough, H. W., Vanhaverbeke, W. and West, J. (2006). Open innovation: Researching a new paradigm. Oxford University Press on Demand.
- (B) Open Innovation Platforms - What are There and How to Choose One https://www.viima.com/the-innovation-archive/open-innovation-platforms-what-are-there-and-how-to-choose-the-right-one
- (B) 20 Best Innovation Management Tools – Choosing the Right One https://www.viima.com/the-innovation-archive/20-best-innovation-management-tools-choosing-the-right-one
- (B) How to select the right Open Innovation platform for your business https://www.ennomotive.com/open-innovation-platform

	Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

4. BUSINESS MODELS AND OPEN INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.
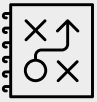
	References

- (A) Baden-Fuller, C. and Morgan, M. S. (2010). Business models as models. Long range planning, 43(2-3), 156-171.
- (B) Business models for open innovation: Matching heterogeneous open innovation strategies with business model dimensions
https://www.sciencedirect.com/science/article/abs/pii/S0263237314001248
- (B) Open Innovation and Open Business Models: A new approach to industrial innovation
https://www.oecd.org/science/inno/37915612.pdf
- (B) Open Innovation to Business Model: New Perspective to connect between technology and market
https://journals.sagepub.com/doi/abs/10.1177/0971721816661784
- (C) The Explainer: What is a Business Model?
https://www.youtube.com/watch?v=_C-vGu2mL38 (2:04)

	Assessment methods

- Multiple-choice exam focusing on theory – written as a colloquium at the end of each chapter or as final exam.

5. CO-CREATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Ozcan, K. and Ramaswamy, V. (2020). The co-creation paradigm. Stanford University Press.
- (B) Managing the co-creation of value https://link.springer.com/article/10.1007/s11747-007-0070-0
- (B) Co-creating innovation www.boardofinnovation.com
- (B) Intellectual Paranoia https://www.100open.com/ip-intellectual-paranoia/
- (C) What is Co-Creation? https://www.youtube.com/watch?v=H-6-wJdeYfk (2:27)

	Assessment methods

- Group presentation of practical application of a business model.
- Presentation assessment.

VIII. FUTURE DEVELOPMENT OF OPEN INNOVATION CONCEPT

Figure 12: Virtual world

1. GLOBALIZATION-DRIVEN INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Scholte, J. A. (2008). Defining globalisation. World Economy, 31(11), 1471-1502.
- (B) Globalisation: A learning curve. Reflections from the OECD's experience https://www.oecd.org/general/globalisationalearningcurvereflectionsfromtheoecdsexperience.htm
- (B) How globalization is changing innovation https://www.weforum.org/agenda/2018/08/globalisation-has-the-potential-to-nurture-innovation-heres-how/
- (B) Globalization Helps Spread Knowledge and Technology Across Borders https://blogs.imf.org/2018/04/09/globalization-helps-spread-knowledge-and-technology-across-borders/
- (C) 9 Star Wars Technology Available Now https://www.youtube.com/watch?v=K-EF4Uv7MoU (5:58)

	Assessment methods

- Teacher assesses students' progress during guided practice.
- Presentation assessment.

2. MAKING FAST STRATEGIC DECISIONS IN HIGH-VELOCITY ENVIRONMENTS

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (B) Open innovation: Past, Present and Future Aspects https://www.slideshare.net/dsalampasis/open-innovation-past-present-and-future-aspects
- (B) Making Fast Strategic Decisions in High-Velocity Environments https://medium.com/pnr/fast-strategic-decisions-in-high-velocity-environments-81a904638c76
- (C) Cybernetic Theory https://www.youtube.com/watch?v=EPGtPWRz1Ng (03:00)
- (C) Contingency Theory https://www.youtube.com/watch?v=lCbDRM1IvZY (02:16)
- (C) What Is Industry 4.0? https://www.youtube.com/watch?v=yKPrJJSv94M (04:56)

	Assessment methods

- Teacher assesses students' progress during guided practice.

3. OPEN INNOVATION AT THE INDIVIDUAL LEVEL

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Schueffel, P. (2015). Microfoundations of Open Innovation: The Antecedants of Openness and Innovation Performance. In Academy of Management Proceedings (Vol. 2015, No. 1, p. 14019). Briarcliff Manor, NY 10510: Academy of Management
- (B) Badir, Y. F., Frank, B. and Bogers, M. (2019). Employee-level open innovation in emerging markets: linking internal, external, and managerial resources. Journal of the Academy of Marketing Science, 1-23. https://link.springer.com/article/10.1007/s11747-019-00674-6
- (B) Microfoundations of Open Innovation: The Antecedants of Openness and Innovation Performance https://www.researchgate.net/publication/291359129_Microfoundations_of_Open_Innovation_The_Antecedants_of_Openness_and_Innovation_Performance
- (C) Writing a personal statement https://www.youtube.com/watch?v=xwXS51Od084 (5:53)

	Assessment methods

- Teacher assesses students' progress during guided practice.

4. OPEN INNOVATION IN SMES

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

	References

- (A) Foreman-Peck, J. (2013). Effectiveness and efficiency of SME innovation policy. Small Business Economics, 41(1), 55-70.
- (B) Open innovation in SMEs: Exploring inter-organizational relationships in an ecosystem
  https://www.researchgate.net/publication/320791513_Open_innovation_in_SMEs_Exploring_inter-organizational_relationships_in_an_ecosystem
- (B) Open innovation in SMEs: a systematic literature review
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- (C) The role of SMEs in the economy:
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	Assessment methods

- Group presentation of practical application of a business model.
- Presentation assessment.

5. OPEN INNOVATION AND LARGE ORGANIZATIONS

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Participants exchange their opinions and views.

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	Assessment methods

- Teacher assesses students' progress during guided practice.

IX. EXAMPLES OF GOOD PRACTICE

Figure 13: Teamwork

1. OPEN INNOVATION SERVICES

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Case study analysis (F).
- Participants exchange their opinions and views.

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  - Video material
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	Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

2. PRODUCTION

Teaching methods
Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Students work in teams on internet source (B) that teacher provides and prepare a short presentation. • Teacher and students watch a video (C). • Case study analysis (F). • Participants exchange their opinions and views.

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	Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

3. TOURISM

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Case study analysis (F).
- Participants exchange their opinions and views.

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	Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

4. EDUCATION

Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Case study analysis (F).
- Participants exchange their opinions and views.

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Assessment methods
- Teacher assesses students' progress during guided practice.   - Group presentation of practical application of a business model.   - Presentation assessment.

5. IT

Teaching methods
Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Students work in teams on internet source (B) that teacher provides and prepare a short presentation. • Teacher and students watch a video (C). • Case study analysis (F). • Participants exchange their opinions and views.

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- How Apple Is Organized for Innovation: The Functional Organization https://www.youtube.com/watch?v=5hENFA3CJUY (4:35)
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Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

6. NATIONAL CASE STUDY

	Teaching methods

Teaching and simultaneous group work.
- Students work independently − find and study the case.
- Study case analysis (D).
- Participants exchange their opinions and views.

	References

- (D) World Wide Web

	SWOT analysis of national legislation, property rights, innovations, etc.	
Strengths		Weaknesses
Opportunities		Threats

	Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

7. EU CASE STUDY

	Teaching methods

Teaching and simultaneous group work.
- Students work independently − find and study the case.
- Study case analysis (D).
- Participants exchange their opinions and views.

	References

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- (D) World Wide Web

	Analysis of EU regulations

- Not defined.

	Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

X.   PRACTICAL ASSIGNMENTS

Figure 14: Businessmen

1. GETTING ACQUAINTED WITH COLLABORATION TOOLS

	Teaching methods
	Teaching and simultaneous group work. • Teacher prepares a short presentation of learning material (A) or any other material on the topic. • Teacher and students watch a video (C). • Hands-on practice; students working with technology (using different tech tools) (E). • Participants exchange their opinions and views.

	Tools (E)
Trello • (A) Where can I find it? https://trello.com/ • (B) How can I use it? Project management and collaboration tool • (C) More about Trello: https://www.youtube.com/watch?v=tVooja0Ta5I (2:10)	
Asana • (A) Where can I find it? https://asana.com/ • (B) How can I use it? Project management and collaboration tool • (C) More about Asana: https://www.youtube.com/watch?v=QDQ6E5nC_0w: (10:46)	
Miro • (A) Where can I find it? https://miro.com/ • (A) How can I use it? Project management and collaboration tool • (C) More about Miro: https://help.miro.com/hc/en-us/articles/360017730533-What-Is-Miro-	
Slack • (A) Where can I find it? https://slack.com/intl/en-si/ • (B) How can I use it? Communication tool • (C) More about Slack? https://www.youtube.com/watch?v=EYgxQGmQkVw (2:33)	

Windows Remote Desktop
- (A) Where can I find it? https://www.microsoft.com/en-us/p/microsoft-remote-desktop/9wzdncrfj3ps#activetab=pivot:overviewtab
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- (A) Where can I find it? www.teamviewer.com
- (A) How can I use it? To connect to a remote PC
- (C) More about TeamViewer: https://www.youtube.com/watch?v=8roSsCjxiwQ (4:26)

Moodle
- (A) Where can I find it? https://moodle.com/
- (A) How can I use it? E-classroom
- (C) More about Moodle: https://www.youtube.com/watch?v=3ORsUGVNxGs (1:54)

Zoom
- (A) Where can I find it? https://zoom.us/
- (A) How can I use it? Meetings, education
- (C) More about Zoom: https://www.youtube.com/watch?v=QOUwumKCW7M (12:52)

Microsoft Teams
- (A) Where can I find it? https://www.microsoft.com/sl-si/microsoft-teams/log-in
- (A) How can I use it? Meetings, education
- (C) More about Microsoft Teams: https://www.youtube.com/watch?v=OxfukizkyCA (20:38)

We transfer
- (A) Where can I find it? https://wetransfer.com/
- (A) How can I use it? File sharing tool
- (C) More about WeTransfer: https://www.youtube.com/watch?v=gmzMsSCKj4E (2:40)

Dropbox
- (A) Where can I find it? https://www.dropbox.com/h
- (A) How can I use it? Cloud file backup and storage
- (C) More about Dropbox: https://www.youtube.com/watch?v=4Nan6Zt6bzw (10:49)

Google Drive
- (A) Where can I find it? https://www.google.si/drive/about.html
- (A) How can I use it? Online file storage and sharing service
- (C) More about Google Drive: https://www.youtube.com/watch?v=P7555XLfHgs (2:25)

OneDrive
- (A) Where can I find it? https://onedrive.live.com/about/en-us/signin/
- (A) How can I use it? Online file storage and sharing service
- (C) More about OneDrive? https://www.youtube.com/watch?v=_IN_a68uHGs (7:55)

Canva
- (A) Where can I find it? https://www.canva.com/
- (A) How can I use it? For graphic design – to create brochures, presentations, flyers, logos, resumes, calendars, videos, cards, labels and more
- (C) More about Canva: https://www.youtube.com/watch?v=WL-WbHwsbs8 (5:32)

Bitable
- (A) Where can I find it? https://biteable.com/
- (A) How can I use it? Making videos
- (C) More about Bitable: https://www.youtube.com/watch?v=iv2mW2z3OtQ (11:02)

2. TEAMWORK PROJECTS

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Case study analysis (F).
- Participants exchange their opinions and views.

	References

- (A) Imbrie, P. K. and Smith, K. A. (2004). Teamwork and project management.
- (B) 10 Reasons Why Teamwork Matters in Project Management https://www.girlsguidetopm.com/10-reasons-why-teamwork-matters-in-project-management/
- (C) Teamwork Projects Overview https://www.youtube.com/watch?v=31okj6rTS_w (11:00)

	Teamwork projects (F)

Students will be challenged with a real-world issue related to open innovation. Through practical assignments they will become familiar with the principals of project management and will learn how to work on group projects. The OI-issue should challenge the students and encourage them to work on it with interdisciplinary approach.

Each year the students are challenged with new project assignment which has its own appropriate weight and value. The assignments should equip students to overcome real-world challenges and to come up with concrete solutions that have practical implications.

6 STEPS TO PROJECT-BASED LEARNING

Listed below are 6 basic steps to project-based learning. The content of each step may vary depending on the course content and the nature of project work.

1. Preparation phase: idea generation
   • Students get acquainted with project work.
   • Teacher presents students with learning objectives, assessment criteria and intended learning outcomes.
   • Group formation. Each group is comprised of 4 to 6 members.
   • Students suggest a topic they should tackle using brainstorming technique.
2. Writing project management draft.
   • Identifying all the activities that must be accomplished.
   • Considering references that will provide students with necessary knowledge and information to successfully complete their project work.
   • Work breakdown. Students can use their first draft to help them define the project goals, objectives, assignments, scopes … and to detail how the project will be executed and managed.
3. Considering project realization steps.
   • Writing action plan to complete project activities and to achieve project goals and desired outcomes.
   • Setting operational goals, to outline a clear-cut path to achieve them.
4. Product development
   • In this phase students analyse, study and develop the product. This phase represents the major part of group project work.
   • Project group activities can be managed by an individual, in pairs or by a whole team.
   • Project evaluation, sharing of ideas, providing constructive feedback for product development and improvements.
5. Students present results.
   • Students present the final product, solution to the problem, exhibition and event.
   • Students can enrich their presentation by using IKT tools and thus prepare visually rich material.
6. Assessing the steps of project work and reporting assessment results.
   • Assessment of the final product, students' participation and engagement in project management steps.
   • The evaluation of project work results and project work management is carried out by participants (students and teacher).

|	**Assessment methods**
	• Teacher assesses students' progress during guided practice. • Group presentation of practical application of a business model. • Presentation assessment.

3. UNIVERSITY-INDUSTRY COLLABORATION

Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Students carry out field research (G).
- Field trip to local incubator etc. (H).
- Participants exchange their opinions and views.

References

- (A) Metcalfe, J. S. (2010). University and business relations: Connecting the knowledge economy. Minerva, 48(1), 5-33.
- (B) Why Companies and Universities Should Forge Long-Term Collaborations https://hbr.org/2018/01/why-companies-and-universities-should-forge-long-term-collaborations
- (B) A digital partnering platform connecting university research with industry R&D https://in-part.com/
- (B) Industry and university collaboration: how partnership drives innovation https://venturewell.org/industry-and-university-collaboration/
- (C) How VUB TechTransfer connects academic and business world https://www.youtube.com/watch?v=myXL1VPv9Js (4:45)

Analysis (G)

In this assignment the students will identify and discuss the opportunities for collaboration with local/national/global companies/businesses/organizations, which will give them an idea of what their job opportunities are.
The following steps will help students achieve their goals:
1. Choose occupation,
2. Choose sector,
3. Choose location,

4. Choose who to interview (HRM or R&D executive),
5. Turn to local organizations and associations,
6. Develop a questionnaire,
7. Choose your research methodology (research, internet, mobile phone ...),
8. Develop your interview questions for in-depth responses,
9. Field research,
10. Analyse your findings and compare them with existing research.

	Field trip (H)

Teacher and Faculty Career Centre together arrange:
1. A field trip where students visit successful companies.
2. Linking with researchers and companies.
3. Incubator or Hub visit.

Students should actively participate in the programme.
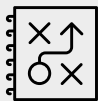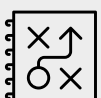
	Assessment methods

- Teacher assesses students' progress during guided practice.
- Group presentation of practical application of a business model.
- Presentation assessment.

4. WORK ON THE DEVELOPMENT OF CONCRETE OPEN INNOVATION

	Teaching methods

Teaching and simultaneous group work.
- Teacher prepares a short presentation of learning material (A) or any other material on the topic.
- Students work in teams on internet source (B) that teacher provides and prepare a short presentation.
- Teacher and students watch a video (C).
- Working on real-world innovations (I).
- Submitting innovation (J).
- Participants exchange their opinions and views.

	References

- (A) Reis, E. (2011). The lean startup. New York: Crown Business, 27.
- (B) Osterwalder, A. and Pigneur, Y. (2010). Business model generation: a handbook for visionaries, game changers, and challengers. John Wiley & Sons.
- (B) The Complete List Of Unicorn Companies https://www.cbinsights.com/research-unicorn-companies
- (B) The Innovator's Dilemma: A Simple Introduction https://worldofwork.io/2019/07/the-innovators-dilemma/
- (B) This New Model Could Be Replacing Corporate Innovation Consultants https://medium.com/@TheIOSummit/this-new-model-could-be-replacing-corporate-innovation-consultants-667301e321c3
- (C) Canvas LMS - Student Orientation Tour https://www.youtube.com/watch?v=x3j8V-uLkNw (10:56)

	Open Innovation Canvas (I)
	• Work on Business Model Canvas

	Submission of open innovation (J)
	• See attached questions: Appendix 2.
	• Jovoto https://www.jovoto.com/about

	Assessment methods
	• Students give individual presentations of OI Canvas. • Presentation and final report assessment.

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APPENDICES

Appendix 1: Sample assessment rubrics

Scoring rubric for mentors for evaluating student's research/seminar paper

1 Strongly disagree	2 Disagree	3 Undecided	4 Mostly agree	5 Strongly agree
Criteria				
Student clearly states and presents the results and findings of his research in the abstract.				
Well-formulated introduction. Well-developed, concise, clear problem/topic statement. Methods used in the research are clearly stated and justified.				
Adequately defined and discussed concrete practical problem, which is also directly related to the course content and learning objectives.				
Student demonstrates his/her ability to state, describe, critically evaluate, demonstrate, explain and argue the topic. Apart from providing information taken from the source, student also provides his/her own thoughts, interpretation, evaluation, analysis or viewpoints, develops fresh insight. Independent thinking is evident.				
Clearly stated problem, well presented methods used in the research, proposed solution that indicates a deep comprehension of the problem, the novelty of proposed solution is relevant to the topic, elaborated and supported with theory.				
Facts and data are clearly outlined, organized and articulated.				
Provides a logical interpretation of the data and graphic elements, which are directly related and relevant to the content.				
Combines material from a variety of sources but doesn't overuse quotes. Demonstrates thoroughness and competence in documenting sources. It is clear which sources are direct quotes, which are paraphrased and which are students' own thoughts.				
Paper is based on primary and new sources.				
Paper meets length requirements (correct number of characters and pages). / This criterion is not relevant if paper is subjected to revision (to meet format, layout and style requirements).				
Summary clearly states and synthesizes main findings and presents possibilities for further development and upgrading of the solution or novelty. Conclusion is logical and reflects critical thinking of the student, relevant to the topic.				
Meets style, grammar, spelling, punctuation, format, design and layout requirements (correct margins, spacing, alignment, indentation, paragraphs, lists) as well as reference and citation requirements. / This criterion is not relevant if paper is subjected to revision (to meet format, layout and style requirements).				
Student paper meets expectations and tasks assigned by mentor (disposition, plan, instructions).				
Student demonstrated high level of motivation and initiative.				
Total number of points scored:				70

Select a grade in the rubric below!

Grade	ECTS grade	Percentage range		Grade points		Definition
10: Excellent	A: excellent	95,60%	100%	66,92	70	Outstanding results with only minor errors
9: Very good	B: very good	84,30%	95,50%	59,01	66,85	Above the average standard but with some errors
8: Good	C: good	70,80%	84,20%	49,56	58,94	Generally sound results
7: Satisfactory	D: satisfactory	59,60%	70,70%	41,72	49,49	Fair but with significant shortcomings
6: Sufficient	E: sufficient	55%	59,50%	38,5	41,65	Performance meets the minimum criteria
5 - 1: Fail	F: fail	0%	55%	0	38,5	Performance does not meet minimum criteria

Performance indicators and research/seminar paper rubric

	Research question /Topic title	Planning	Execution	Results	Evaluation	Oral presentation	Written presentation
Up to 6 points	Student poses his own research question, which is clearly stated and relevant to the topic	Independent research planning	Student does independent research	Outstanding results with only minor errors	Qualitative evaluation of the problem, provides his/her own conclusions	Excellent delivery without errors (student doesn't use notes)	Excellent composition, text is almost entirely free of errors, with near perfect mechanics (correct paragraph and chapter structure, accurately organized titles. Chapters meet length requirements and have correct sequence
Up to 4 points	Student poses his own research question but requires minor help from teacher	Independent research planning but requires minimal help from teacher	Student requires minor help from teacher	Above the average standard but with some errors	Qualitative evaluation of the problem	Effective delivery, doesn't use notes but makes minor errors; seldom returns to notes and makes no errors	Adequate level of work with several minor mistakes (correct paragraph structure but fails to meet length requirements. Text has spelling or grammatical errors)
Up to 2 points	Research question is vague and poorly stated, requires help from teacher	Poor research planning, requires more development and help from teacher	Student requires significant help from teacher	Fair but with significant shortcomings	Student offers basic description and summary of background research	Student is ill-prepared and reading from notes	Several major mistakes (inappropriate format, fails to use paragraphs, chapters do not follow a logical order; text has several major spelling or grammatical errors)
	Student fails to pose a research question; research topic is proposed by teacher	Plan is developed by teacher	Research paper is written by others	Student fails to provide research paper/research paper is irrelevant to the topic/research paper is plagiarized	Irrelevant or missing		No presentation or irrelevant to the topic

Source: (University of Maribor 2014)

Performance indicators of student learning outcomes

Criteria	Excellent (10)	Very good (9)	Good (8)	Satisfactory (7)	Sufficient (6)	Fail (5-1)
Percentage range	91 – 100 %	81 – 90 %	71 – 80 %	61 – 70%	51 – 60%	0 – 50 %
Student demonstrates	Outstanding, exceptional learning outcomes.	Exemplary learning outcomes.	Accomplished learning outcomings.	Acceptable learning outcomes with shortcomings.	Minimally acceptable learning outcomes.	Unacceptable learning outcomes.
Analysis of knowledge (cognitive domain contains learning abilities to: memorize, understand, employ, analyse, synthesize, evaluate and create)	First Class Standing. Superior Performance showing comprehensive, in-depth understanding of subject matter.	Shows thorough knowledge. Clearly above average performance with knowledge of principles and facts generally complete and with no serious deficiencies.	Shows relevant and sound knowledge and understanding of principles and facts at least adequate to communicate intelligently in the discipline.	Pass. Shows relevant knowledge and some understanding of principles and facts but with definite deficiencies.	Minimal pass. A passing grade indicating marginal performance and knowledge. Student not likely to succeed in subsequent courses in the subject.	Fail. Shows fragmentary, inadequate knowledge to meet learning outcomes.
Skills and competencies (process competencies, having good command of job-specific tools and technologies)	Demonstrates outstanding process competencies, excellent command of job-specific tools and technologies (effective work with only minor errors. Demonstrates high level of automaticity).	Demonstrates exemplary process competences and above average command of job-specific tools and technologies.	Demonstrates good process competencies and good command of job-specific tools and technologies.	Demonstrates relevant process competencies and acceptable command of job-specific tools and technologies but with few shortcomings.	Demonstrates basic process competencies and sufficient command of procedures, job-specific tools and technologies but needs improvement.	Shows low-level of process competencies and fails to meet requirements.
Problem-solving skills	Outstanding, exceptional problem-solving skills in familiar and unfamiliar context.	Exemplary problem-solving skills in familiar and unfamiliar context.	Accomplished problem-solving skills in familiar and unfamiliar context.	Accomplished problem-solving skills in familiar and unfamiliar context, with minor shortcomings.	Minimally acceptable problem-solving skills in familiar and unfamiliar context.	Student fails to solve the problem.

Criteria	Excellent (10)	Very good (9)	Good (8)	Satisfactory (7)	Sufficient (6)	Fail (5-1)
Innovation and creativity (novelty or uniqueness of idea, product, form, questions, creative formulation of ideas or solutions)	Demonstrates outstanding, exceptional innovation and creativity skills (extends novel, unique idea, question, format or product, procedures or solution to create new knowledge or knowledge that crosses boundaries).	Demonstrates exemplary innovation and creativity skills in terms of ideas, questions, format, products, procedures or solutions. Has the ability to create a novel or unique product, idea, question.	Demonstrates accomplished innovation and creativity skills in terms of ideas, questions, format, products, procedures or solutions. Experiments with creating a novel or unique idea or product.	Demonstrates accomplished innovation and creativity skills in terms of ideas, questions, format, products, procedures or solutions, but with shortcoming.	Demonstrates minimally acceptable innovation and creativity skills in terms of ideas, questions, format, products, procedures or solutions.	Demonstrates unacceptable innovation and creativity skills in terms of ideas, questions, format, products, procedures or solutions. Reformulates a collection of available ideas.
Initiative and entrepreneurship (the ability to turn ideas into action through creativity, innovation, and risk-taking, as well as the ability to plan and manage projects.)	Demonstrates outstanding, exemplary initiative and entrepreneurial skills.	Demonstrates proficient initiative and entrepreneurial skills.	Demonstrates competent initiative and entrepreneurial skills.	Demonstrates satisfactory initiative and entrepreneurial skills.	Demonstrates sufficient initiative and entrepreneurial skills.	Fails to demonstrate/lacks initiative and entrepreneurial skills.
Knowledge transfer (transfer of knowledge skills to a new context. Adapts and applies skills, abilities, theories, or methodologies gained in one situation to new situations)	Demonstrates outstanding ability to apply knowledge to new and challenging contexts.	Demonstrates exemplary ability to apply knowledge to new and challenging contexts.	Demonstrates good ability to apply knowledge to new and challenging contexts.	Demonstrates good ability to apply knowledge to new and challenging contexts but with shortcomings.	Demonstrates sufficient ability to apply knowledge to new and challenging contexts.	Fails to demonstrate/lacks ability to apply knowledge to new and challenging contexts.

Critical thinking	Excellent critical thinking skills	Very good critical thinking skills	Good critical thinking skills	Good critical thinking skills but with shortcomings	Minimally acceptable critical thinking skills	Unacceptable critical thinking skills
Percentage range	**91 – 100 %**	**81 – 90 %**	**71 – 80 %**	**61 – 70%**	**51 – 60%**	**0 – 50 %**
Independent work/learning skills (level of assistance required)	Excellent, outstanding independent work/learning skills	Can work/learn independently but requires occasional assistance	Can work/learn independently but requires assistance	Can work/learn independently but requires frequent assistance	Demonstrates minimally acceptable skills to work/learn independently	Unacceptable independent work/learnings skills
Reflection and self-assessment (ability to critically review, analyse, and evaluate your own work or that of someone else)	Excellent, outstanding reflective ability	Very good reflective ability	Good reflective ability	Good reflective abilities but with shortcomings	Minimally acceptable reflective abilities	Unacceptable reflective ability
Attitude (towards learning, content, objects, organisms, codes of ethics, co-workers, professions, etc.)	Excellent attitude toward …	Very good attitude toward …	Good attitude toward ...	Satisfactory attitude toward ... but with shortcomings	Minimally acceptable attitude toward ...	Unacceptable attitude toward …
Problem-solving skills	Outstanding, exceptional problem-solving skills	Exemplary problem-solving skills	Accomplished problem-solving skills	Accomplished problem-solving skills but with shortcomings	Minimally acceptable problem-solving skills	Unacceptable problem-solving skills
Communication skills (ability to communicate orally and in written language)	Flawless communication skills	Very good communication skills	Good communication skills	Good communications skill but with minor errors	Minimally acceptable communication skills	Lack of communication skills
Teamwork	The assigned tasks are completed flawlessly	The assigned tasks are effectively completed	The assigned tasks are performed well	Able to complete the assigned tasks but with shortcomings	Minimally acceptable ability to complete the assigned tasks	Fails to complete the assigned tasks

Source: (University of Maribor 2014)

Oral defense rubric

Criteria sample for students' oral defense of his/her research or seminar paper

1	2	3	4	5	
Strongly disagree	Disagree	Undecided	Mostly agree	Strongly agree	
Criteria					
Well-grounded, properly contextualized, clearly and convincingly presented					5
Results are clearly presented and accurately interpreted					5
Clear, logical, convincing, strong organization					5
Candidate used appropriate research methodology and met format requirements					5
Clearly and accurately answered research question and/or effectively defines the scope of (hypo)thesis					5
Candidate's speech is clear and articulate					5
Candidate quickly grasps questions, responds clearly and aptly					5
Candidate did not exceed the time limit					5
Overall score:					40

Select a grade in the rubric below!

Grade	ECTS Grade	Percentage range %		Grade points		Definition
10: excellent	A: excellent	95,60%	100%	38,24	40	Outstanding results with only minor errors
9: very good	B: very good	84,30%	95,50%	33,72	38,2	Above the average standard but with some errors
8: very good	C: good	70,80%	84,20%	28,32	33,68	Generally sound results
7: good	D: satisfactory	59,60%	70,70%	23,84	28,28	Fair but with significant shortcomings
6: sufficient	E: sufficient	55%	59,50%	22	23,8	Performance meets the minimum criteria
5 - 1: insufficient	F: fail	0%	55%	0	22	Performance does not meet the minimum criteria

Questionnaire for anonymous peer-assessment

Use the criteria below to assess your and peer's contribution to teamwork at the end of the course. Choose a grade on a scale of 1 to 10 from below criteria:

Grade	Grade description	Description of performance of individual member	Interpretation of points for grading teamwork
1	Most unsatisfactory	Failed to contribute to teamwork/ completely unresponsive team member	100% **off** of total points earned for teamwork assignments or 0 points for teamwork assignments
2	Unsatisfactory	Team member responded to assignments but failed to complete them/did little work and has relied on others to do the work	80% **off** of total points earned for teamwork assignments
3	Satisfactory	Supported the effort of others, gave comments on the work done but failed to provide constructive arguments and feedback to his/her team members	70% **off** of total points earned for teamwork assignments
4	Very poor	Little contribution on his/her part, no original thoughts or work done, only short paragraphs of copy-paste text, didn't contribute any ideas to advance the work of the group.	50% **off** of total points earned for teamwork assignments
5	Poor	Completed the assigned task but went by deadline, his/her ideas are irrelevant, didn't actively participate in discussions, didn't provide any arguments or gave useless suggestions, was not cooperative, didn't address team's needs, lack of teamwork skills.	25% **off** of total points earned for teamwork assignments
6	Fairly good	Contributed his or her portion of the teamwork by deadline, but didn't contribute to the end product of the team, contributed few ideas to advance the work of the group, insufficient cooperation in discussions and no commitment to create synergy in the team, (didn't attend online meetings)	15% **off** of total points earned for teamwork assignments
7	Good	Contributed his or her portion of the teamwork by deadline, but showed little cooperation and engagement in discussions compared to other members of the group; overall present at the meetings, but failed to provide solutions to advance the work of the group	10% **off** of total points earned for teamwork assignments or the number of total points earned for teamwork assignments
8	Very good	Contributed his or her portion of the teamwork by deadline, showed little cooperation and engagement in discussions compared to other members of the group, showed little commitment to foster synergy in the team; didn't provide any new, original suggestions but only paraphrased, summarized, reformulated suggestions of others	5% **off** of total points earned for teamwork assignments
9	Excellent	Contributed his or her portion of the teamwork by deadline which reflected his/her own ideas, thoughts, views, showed adequate level of participation in discussions, promoted team synergy; made extra effort to advance the work of the group	100% of total points earned for teamwork assignments
10	Exceptional	Contributed his or her portion of the teamwork by deadline which reflected his/her own ideas, thoughts, views, gave encouragement and supported active collaboration of team members, always displayed positive attitude in order to create synergy in the team, provided coaching or guidance, intervened when tasks were not moving toward goals, performed all tasks very effectively, did more than others, was highly productive; attended all meetings and participated enthusiastically; very reliable, assumed leadership role as necessary, did the work that was assigned by the group.	Up to +5% of the total points earned for teamwork assignments

Provide comments to justify the grade given and to explain your decision. (This part is obligatory when students assign to their peer(s) grade 10 (the highest) or grade 6 (the lowest).

Appendix 2: Submission of innovative idea

IDEA, PRODUCT, TECHNOLOGY AND INNOVATIVENESS

1. Describe the product or service that your company offers.
2. Describe the problem that you are solving, the purpose of your idea, how it works and who will benefit from it
3. How is this problem solved today and how is your solution better than what is already available today?
4. Provide detailed information on your idea. Along with the description of idea itself, provide link to your online store, physical working model or prototype, MVP, graphics, sketches, illustrations, etc.) Provide as much material and detail as possible to explain your idea so that it is communicated as clearly and thoroughly as possible.
5. Define development stage of your idea, describe its current characteristics and tell what is the next big thing you want to do with your idea?
6. Explain how you get customer feedback on your idea or product, how does it influence your decision making and the steps you take to improve your product or service (analytics, customer interview, etc.)
7. What is your core competency and what differentiates your idea for a product or service from what is currently being offered in the marketplace today?
8. What is your vision, where do you see your company/business in 5 years?
9. List 5 fundamental principles of your company.

TECHNOLOGY

1. Describe the technology that you use and explain what is the biggest difference or advantage of it over the current practice?
2. Explain which of the already existing technologies you used and which technologies were developed by you.
3. Will you protect/patent your idea/product? Explain how.
4. Does your company own or has a license to all IP used and did you licensed other technology that you use?
5. Is your company's core competency gained from technology (key competitive advantage/edge)? If yes, explain how. If not, explain where does it stem from.
6. List your key suppliers and explain how will you negotiate with them.

CUSTOMERS, DISTRIBUTION IN BUSINESS MODEL

1. Describe your ideal customer (persona), their day-to-day life and how they make their purchasing decision.
2. Make a list of customers already using your product or service. If you have no customers yet, define who are your primary target customers and tell how many (of many of these) customers have you talked to already?
3. Write the number of customers who made more than one purchase. Have they also purchased any other product or service that you offer?
4. Define payment methods for your product or service.
5. Describe the way to approach new customers.
6. Describe your strategies to increase your customer base and how will you make it grow?
7. Describe your typical selling day and explain your selling processes step by step (estimate the time required to complete each step).
8. Define 3 key start-up metrics for your company (provide overview of the current state of your company or business based on these metrics)?

9. Measure LTV (Lifetime Value) and CAC (Total Marketing + Sales Expenses) of your customer.

TEAM

1. Make a list of founders and their references!
2. Write interesting fact about each founder.
3. Add a link to 2-min video presentation of your team.
4. Describe the level of commitment for each member of the team (full-time, part-time, hobby …) Provide details on the type of contract (employment contract, professional/client services agreement, Student Employment Agency …)
5. How long have you been working together?
6. What is your (of each individual member) knowledge of and how familiar are you with industry?
7. Most successful teams share appropriate mix of technical, business and product development knowledge. Describe the role of each member of your team.
8. What is your company/business location? Would you be prepared to move your business/company abroad should the need arise?
9. How much importance and value do you place on design and user experience and who is accountable for that?
10. Highlight the biggest engineering feat inside and outside your company/business for each individual member of the team who works on research and innovation or in product development.
11. Which is the most expensive product or service sold by your CEO?

MARKET

1. Define your target market, market size and what are you planning to achieve over the next five years in terms of sales (TAM, SAM, SOM).
2. Define trend that will foster your company's growth.
3. Explain why is now the right time and identify the key success factor(s) in a go-to-market strategy.
4. List three threats and weaknesses that could drive your company/business to ruin.

BUSINESS COMPETITION

1. Make a list of businesses/companies that are selling or developing similar products or services and compete for the same potential market (direct and indirect competition). Provide link to their website.
2. How is your idea or product better than/what differentiates your idea for a product or service from what is currently being offered by others in the marketplace today?

FINANCES

1. Have you found your investor yet (if yes, who is it and approximately how much money is he/she willing to invest)?
2. Estimate financial potential of your company/business.

OTHER

1. Have you ever participated in a start-up accelerator or learning/training programme?
3. Do you have any mentors, advisory board, etc. who provide advice and help your company succeed?
4. Is your company registered/has seat/headquarters/subsidiary or branch in your country?
5. Are there any legal threats that your company could face?
6. Are you willing to participate in mentoring/training programme?
7. Could you (or have you already) attended start-up weekend or Demo Day in the preselection procedure?

APENDIX

1. Brief summary (no longer than A4 sheet of paper including all key information)
2. Presentation (that complies with guidelines)