SYLLABUS

Name: Implementation of innovations in technical systems

Name in Polish: Wdrażanie innowacji w systemach technicznych
Name in English: Implementation of innovations in technical systems

Information on course:

Course offered by department:	Faculty of Organisation and Management
Course for department:	Silesian University of Technology
Study level and form:	Bechelor's degree, Full-time
Term:	summer semester 2022/2023
Coordinator of course edition:	prof. PhD DSc, University Professor Małgorzata Dobrowolska

Default type of course examination report:

Credit for (grade allocation)

Language:

English

Course homepage:

https://platforma.polsl.pl/roz/

ECTS

2

Short description:

The lecture is conducted in an interactive manner, involving students in activities during the course of the lecture, including discussion, sharing opinions and experiences. The lecture is based on the Harvard Business School paradigm with the use of mini-case studies and micro presentations by students in the framework of so-called participatory teaching. During the lecture, special guests are invited from the socio-economic environment, an experts in a given issue/module of the lecture topic.
Course assumptions:
The main aim of the training is to transfer of orderly knowledge and acquisition of skills and competences related to the theoretical and practical aspects of implementing innovations in technical systems.

Description:

Lecture:

1. What is innovation ?
2. How do we achieve innovation?
3. Leading change for innovation
4. Vision & strategic plan
5. Design thinking
6. Prototyping & MVP
7. Production & scaling
8. Monitoring & securing
9. Continuous improvement
10. Agile delivery (Scrum & Kanban)

Number of hours of classes with direct participation of an academic teacher: 25
Lecture: 25 hours

Number of hours allocated to student's own work:
- Preparation for lecture: 5h
- Preparation for exercises: 5h
- Completion of descriptive work - so called post-work: 10h
- Execution of a chosen form from those described for optional credit: 5h

Total number of hours: 50
Number of ECTS credits: 2

Number of ECTS credits obtained through direct teaching activities: 1

Bibliography:

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Misztal, J., Sosnowska, E., Stasiak, T., Wojciechowski, P., 2020, Usługi logistyczne w przedsiębiorstwach 4.0, Przedsiębiorczość i Zarządzanie, 23-24
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Learning outcomes:

symbol	expected learning outcomes *a student who has passed the course:*	forms of instruction	ways of verifying and assessing the learning outcome
Knowledge: knows and understands			
K1A _W3	Basic engineering processes and technologies occurring in the life cycle of technical equipment, objects and systems, as well as ways of solving typical engineering tasks, especially in relation to the organization of production processes and production management.	Lecture / exercises	*1. Attendance* *2. Oral test - activity* *3. Written assessment*
Skills: is able to			
K1A _U5	Basic engineering processes and technologies occurring in the life cycle of technical equipment, objects and systems, as well as ways of solving typical engineering tasks, especially in relation to the organization of production processes and production management.	Lecture / exercises	*1. Attendance* *2. Oral test - activity* *3. Written assessment*
K1A _U12	be able to use a foreign language at the B2+ level of the Common	Lecture / exercises	*1. Attendance*

	European Framework of Reference for Languages as well as specialized terminology related to the field of study Management and Production Engineering		*2. Oral test - activity* *3. Written assessment*
Social competence: is prepared to			
K2A_K02	Fulfilling social obligations, co-organizing activities for the social environment, initiating activities for the public interest, thinking and acting in an entrepreneurial manner.	Lecture / exercises	*1. Attendance* *2. Oral test - activity* *3. Written assessment*

Assessment methods and assessment criteria:

Compulsory course credit requirements:

- Attendance:

1 absence is permissible, any additional absences should be excused and made up as they go along, in the form of an oral presentation of problem issues from the course in which the student was absent - after an appointment with the lecturer at a teaching consultation.

- Oral test - activity:

Activity in class, participation in discussion, substantive preparation for class (the sum of pluses makes up the activity grade). Students may receive 1 or 2 pluses in each class, depending on his/her level of engagement and presentation of self-preparation for the class. The pluses will be recorded on an ongoing basis and, at the end of the semester, the sum of the pluses will determine the marks for the oral test.

Grading criteria:

14 pluses and above = grade 5.0

13 - 11 pluses = grade 4.5

10 - 8 pluses = grade 4.0

7 - 5 pluses = grade 3.5 min. 4

pluses = grade 3.0

- Knowledge check - an original written thematic paper, so-called post-work, on a topic chosen by the student.

The following criteria will be taken into account in the assessment process:

Correct and substantive definition of the post-work topic; Relevance of the topic to the activities, assignments and case studies carried out in class; Correctly formulated general and specific objectives; Thematic scope and exhaustive description of the topic; Bibliographic resource and sources; Resourcefulness of the appendices.

For each criterion met, the student can obtain 1 or 2 points, so the maximum number of points to be obtained is 28.

Assessment is carried out according to the post-work written topic paper assessment scale.

Assessment criteria:

26 – 28 points = grade 5.0

23 – 25 points = grade 4.5

20 – 22 points = grade 4.0

17 – 19 points = grade 3.5

14 - 16 points = grade 3.0

min. 14 points = credit

- Micro-teaching - self-directed delivery of a talk on a lecture topic module together with a presentation of own opinion and thoughts on the topic.

Student may obtain 1 or 2 points for each criterion met, so the maximum number of points to be obtained is 22.

The assessment is done according to the microlearning assessment scale.

Assessment criteria:

21 – 22 points = grade 5.0

19 – 20 points = grade 4.5

16 – 18 points = grade 4.0

14 – 15 points = grade 3.5
11 – 13 points = grade 3.0 min. 11
points = credit

Microteaching time: up to 5 minutes per speech.
Additional course credit requirements (optional):
- *Multimedia presentation* - substantive preparation of the thematic module. Multimedia presentation with a selected theoretical topic on the introduction to the ongoing microteaching activities. Duration up to 7 minutes.

Assessment criteria:
5 points = very good presentation in terms of content and methodology, creative presentation, high involvement of the student in the preparation of the presentation; grade 5.0
4 points = good presentation in terms of content and methodology, creative presentation, average student involvement in preparation of presentation; grade a 4.0
3 points = sufficient presentation in terms of content and methodology, not very creative presentation, low involvement of the student in the preparation of the presentation; grade 3.0
2 points and less = Inadequate presentation in terms of content and methodology, lack of creativity in the presentation, very low or no involvement of the student in the preparation of the presentation; grade 2.0 (presentation not passed, requiring written correction).

- *Written case study* - testing the ability to apply knowledge in practice.
Written test: Written project - presentation of a case study chosen by the student concerning the thematic module of the lecture.

Assessment criteria:
5 points = very good case study in terms of content and methodology, relevant to the lecture topic module, high student involvement in the preparation of the case study; grade 5.0
4 points = Good case study in terms of content and methodology, adequate for the lecture topic module, average student involvement in case study preparation; grade 4.0
3 points = Sufficient case study in terms of content and methodology, not very relevant to the lecture topic module, low student involvement in the preparation of the case study, grade 3.0
2 points and less = Inadequate case study in terms of content and methodology, inadequate for the lecture topic module, very low or no student involvement in the preparation of the case study; grade 2.0 (Written case study not passed, requiring written correction).

- *Written exam consisting of 5 essay questions.*

Assessment criteria:
5 points = providing correct answers to five essay questions in a comprehensive and factually correct manner; grade 5.0
4 points = providing correct answers to the four essay questions in a comprehensive and factually correct manner; grade 4.0
3 points = provide correct answers to the three essay questions in a comprehensive and factually correct manner; grade 3.0
2 points and less = providing correct answers to two or fewer descriptive questions; grade 2.0, written exam not passed, requiring written improvement.

Course grades will be determined individually with the Student in consultation, taking into account the following components:
- *attendance*, class activity, microteaching - self-directed contributions to the lecture topic module with presentation of own opinion and thoughts on the topic.
- *knowledge check - an original written post-work* on a topic chosen by the student.

and additional, optionally selected from:
- multimedia presentation - theory
- written case study
- and the result of the written examination

Will therefore be the average of the component grades obtained, enhanced by the Student's self-assessment.

Practical placement:
Not applicable