

Course description

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| Course abbreviation: | KPV/PRMA | Page: | 1 / 4 |
| Course name: | Project Management in Engineering | | |
| Academic Year: | 2023/2024 | Printed: | 03.06.2024 08:07 |

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| Department/Unit / | KPV / PRMA | | | Academic Year | 2023/2024 |
| Title | Project Management in Engineering | | | Type of completion | Exam |
| Accredited/Credits | Yes, 4 Cred. | | | Type of completion | Combined |
| Number of hours | Lecture 2 [Hours/Week] Tutorial 2 [Hours/Week] | | | | |
| Occ/max | Status A | Status B | Status C | Course credit prior to | YES |
| Summer semester | 0 / - | 0 / - | 0 / - | Counted into average | YES |
| Winter semester | 0 / - | 0 / - | 1 / - | Min. (B+C) students | 10 |
| Timetable | Yes | | | Repeated registration | NO |
| Language of instruction | English | | | Semester taught | Winter semester |
| Optional course | Yes | | | Internship duration | 0 |
| Evaluation scale | 1 2 3 4 | | | Ev. sc. – cred. | S N |
| No. of hours of on-premise | | | | | |
| Auto acc. of credit | Yes in the case of a previous evaluation 4 nebo nic. | | | | |
| Periodicity | K | | | | |
| Substituted course | None | | | | |
| Preclusive courses | N/A | | | | |
| Prerequisite courses | N/A | | | | |
| Informally recommended courses | N/A | | | | |
| Courses depending on this Course | N/A | | | | |

Course objectives:

The goal of the course is to equip students with basic knowledge about theory and practice of innovations of products, processes and systems from point of view of engineering firm practice, about methods of project management and about ways of its apply in conditions of engineering firm.

Requirements on student

Credit conditions: Credit is awarded on condition of having completed two tasks. The first task is to prepare an analysis of a specific project assigned by the teacher. Present the result at one of the seminars from the 7th till 9th week of the semester. The second task is to prepare a project plan using MS Project on a topic chosen by the student and approved by the teacher. The project plan should be elaborated in a group of 2-4 students. The results will be presented using MS Project and MS PowerPoint at one of the last seminars.

Examination conditions: Demonstrate knowledge of the course problematics on the basis of answering the assigned questions.

Content

The course is focused on project management methods and their practical application in the conditions of mechanical engineering company.

1. Tasks of mechanical engineering company that can be solved by project management
2. Project and project management
3. Preparation of project
4. Project planning
5. Structural decomposition of project, implementation schedule and plan of sources
6. Plan of costs and plan of risks
7. Methods that can be use to plan project
8. Project organization and project management
9. Leadership of project team

10. Relationships, communication and conflicts in project team management
11. Motivation, stimulation and performance of project team
12. Project implementation management
13. Cost management in project implementation, Critical chain method

Fields of study

Guarantors and lecturers

- **Guarantors:** Doc. Ing. Michal Šimon, Ph.D. (100%)
- **Lecturer:** Ing. Bc. Miroslav Malaga, Ph.D. (50%), Doc. Ing. Michal Šimon, Ph.D. (50%)
- **Tutorial lecturer:** Ing. Bc. Miroslav Malaga, Ph.D. (100%)

Literature

- **Basic:** Wysocki, Robert K. *Effective project management : traditional, agile, extreme, Hybrid*. Eighth edition. 2019. ISBN 978-1-119-56280-1.
- **Basic:** Larson, Erik W.; Gray, Clifford F. *Project management : the managerial process*. Seventh edition. 2018. ISBN 978-1-259-66609-4.
- **Extending:** Layton, Mark; Ostermiller, Steven and Kynaston Dean. *Agile project management*. New Jersey, USA, 2020. ISBN 978-1-119-67699-7.
- **Extending:** Project management: a multi-perspective leadership framework (Mikkelsen, Hans; Riis, Jens) - https://vigo.uk.zcu.cz/F/CEHIDMPN97D3U9L9IKQ8VQF7SG38S74FU4T2L7K1Y8TY3M41LF-46707?func=full-set-set&set_number=000575&set_entry=000001&format=999 >
- **Recommended:** Snyder Dionisio, Cynthia. *Microsoft Project 2019 For Dummies (Project for Dummies)*. New Jersey, USA, 2019. ISBN 111956512X.

Time requirements

All forms of study

| Activities | Time requirements for activity [h] |
|--|------------------------------------|
| Presentation preparation (report) (1-10) | 10 |
| Team project (50/number of students) | 16 |
| Preparation for an examination (30-60) | 30 |
| Contact hours | 52 |
| Total: | 108 |

assessment methods

Knowledge - knowledge achieved by taking this course are verified by the following means:

- Oral exam
- Test
- Continuous assessment

Skills - skills achieved by taking this course are verified by the following means:

- Seminar work
- Skills demonstration during practicum
- Group presentation at a seminar
- Peer evaluation of students
- Project

Competences - competence achieved by taking this course are verified by the following means:

Oral exam
 Test
 Group presentation at a seminar
 Project

prerequisite**Knowledge - students are expected to possess the following knowledge before the course commences to finish it successfully:**

basic management knowledge of individual business activities
 be able to work in a team and, depending on your position in the team, either work effectively or manage the team
 be able to work independently and be able to further self-study
 reveal all potential connections with the assigned topic, which they will capture in the project plan and be able to assign them the expected time risk and significance

Skills - students are expected to possess the following skills before the course commences to finish it successfully:

implement theoretical knowledge to solve specific problems in the field of project management and be able to design a solution based on the acquired knowledge
 apply knowledge independently, be able to combine different theoretical areas and look for context

Competences - students are expected to possess the following competences before the course commences to finish it successfully:

N/A
 N/A
 N/A

teaching methods**Knowledge - the following training methods are used to achieve the required knowledge:**

Lecture supplemented with a discussion
 Self-study of literature
 Discussion
 Cooperative instruction
 Project-based instruction
 Multimedia supported teaching
 Lecture with visual aids

Skills - the following training methods are used to achieve the required skills:

Students' portfolio
 Task-based study method
 Project-based instruction
 Practicum
 Diskuse

Competences - the following training methods are used to achieve the required competences:

Project-based instruction
 Discussion
 Task-based study method

learning outcomes**Knowledge - knowledge resulting from the course:**

communicate clearly and convincingly to experts and lay people information about professional problems associated to project management
 comprehensively explain at a upper level project solutions of non-recurring tasks
 distinguish tasks that are of a project nature from tasks that are not of a project nature

Skills - skills resulting from the course:

to design, on the basis of acquired theoretical and practical knowledge, the resources drawing in the entire length of the project

apply the critical chain method to project planning and management

use theoretical project management knowledge in solving specific practical problems

independently solve problems in the project schedule

to acquire other professional skills on the basis of experience in solving project tasks

Competences - competences resulting from the course:

N/A

N/A

N/A

N/A

Course is included in study programmes:

| Study Programme | Type of | Form of | Branch | Stage | St. plan v. | Year | Block | Status | R.year | R. |
|--|---------------------|-----------|---|-------|-------------|------|--------------------------------------|--------|--------|----|
| Design of Power Machines and Equipment | Postgraduate Master | Full-time | Digital Manufacturing | 1 | 2021 | 2023 | Compulsory courses | A | 2 | ZS |
| Design of Power Machines and Equipment | Postgraduate Master | Full-time | Manufacturing Machines and Technologies | 1 | 2021 | 2023 | Povinně volitelné předměty 2 roč. ZS | B | 2 | ZS |