POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)
pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name

MANAGING RESEARCH PROJECTS

Course

Proposed by Discipline	Year/Semester
-	I/2
Type of studies	Course offered in
Doctoral School	English
Form of study	Requirements
full-time	elective

Number of hours

Lecture	Tutorials	Projects/seminars
4		

Number of credit points

1

Lecturers

Responsible for the course/lecturer:

prof. dr hab. inż. Jerzy Nawrocki
email: jerzy.nawrocki@put.poznan.pl
phone: +48 61 665 2980
Faculty of Computing and Telecommunications
Poznan University of Technology
ul. Piotrowo 2, 60-965 Poznan, Poland

Responsible for the course/lecturer:

Prerequisites

Knowledge: good command of English.

Skills: ability to use the resources of the library of Poznan University of Technology.

Social competences: willingness to improve their research skills.

Course objective

The course aims to help PhD students better manage their PhD projects.

Course-related learning outcomes

Knowledge

A PhD student who graduated from doctoral school knows and understands:

1. scientific research methodology in disciplines related to engineering, natural sciences, and social sciences. [P8S_WG/SzD_W03]

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Skills

A PhD student who graduated from doctoral school can:

1. define the aim and subject of scientific research, form a research hypothesis, [P8S_UW/SzD_U01]

2. critically analyze and asses scientific research results, work of experts and other creative activities together with their contribution into knowledge development, [P8S_UW/SzD_U02]

3. communicate on specialist issues on the level that allows active participation in the international scientific community, [P8S_UK/SzD_U04]

4. plan and implement individual and team research projects. [P8S_UO/SzD_U09]

Social competences

A PhD student who graduated from doctoral school is ready to:

1. critically assess the achievements within a given scientific discipline. [P8S_KK/SzD_K01]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

PQF code	Methods for verification of learning outcomes	Assessment criteria
W03, K01	Test	90% - A, 80% - B etc.
U01, U02, U04, U09	Peer review of protocols of systematic literature study	Quality of the review

Programme content

1. Setting research goals (SzD_U01, SzD_U04)

2. Scrum for research (SzD_U09)

3. Managing systematic literature studies (SzD_W03, SzD_U02, SzD_U04, SzD_K01)

4. Managing scientific experiments (SzD_U02)

Course topics

1. Setting research goals: SMART criteria, structured abstract, project statement, Technology Readiness Levels and Death Valley syndrome.

2. Scrum for research: paper-based PhD thesis, Manifesto of Agility, Scrum practices useful in the research context, Kanban board.

3. Managing systematic literature studies: systematic literature review vs. systematic mapping study, database-driven literature studies, snowballing, protocol of systematic literature study, design of Data Extraction Table, validity threats in systematic literature studies, planning execution of literature studies, checklist-based review of protocols.

4. Managing scientific experiments: the V model, design for reproducibility, GQM approach to defining an empirical study, describing a measurement system, experiment procedure, observations and their threats to validity, conjectures and their threats to validity.

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Teaching methods

Multimedia presentations, including illustrations and examples. Short quizzes. Peer reviews.

Bibliography

Basic

1. The Scrum Guide, https://www.scrum.org/resources/scrum-guide

2. Guidelines for performing Systematic Literature Reviews in Software Engineering, EBSE Tech. Rep. EBSE-2007-01, Univ. of Durham,

https://www.elsevier.com/__data/promis_misc/525444systematicreviewsguide.pdf

Additional

1. Claes Wohlin et al., Experimentation in Software Engineering, Springer, 2012, Chapter 8, 89- 116.

Breakdown of average student's workload

	Hours	ECTS
Total workload	28	1,0
Classes requiring direct contact with the teacher	4	0,0
Doctoral student's own work (literature studies, preparation for tutorials, project preparation, consultations with the teacher) [1]	24	1,0

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[1] delete or add other activities as appropriate