



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Diploma thesis [S2TIIZM1E>PD]

Course

Field of study

Information Technology for Smart and Sustainable Mobility

Year/Semester

2/4

Area of study (specialization)

–

Profile of study

general academic

Level of study

second-cycle

Course offered in

English

Form of study

full-time

Requirements

compulsory

Number of hours

Lecture

0

Laboratory classes

0

Other

0

Tutorials

0

Projects/seminars

10

Number of credit points

10,00

Coordinators

dr inż. Anna Kobaszyńska-Twardowska
anna.kobaszynska-twardowska@put.poznan.pl

Lecturers

Prerequisites

Knowledge: The student has advanced and in-depth knowledge in the field of transport engineering, including theoretical foundations, tools, and means used to solve basic engineering problems. Skills: The student is able to plan and conduct experiments, including measurements and simulations, interpret the obtained results, draw conclusions, and formulate and verify hypotheses related to complex engineering problems and basic research problems. Social Competences: Ability to self-educate and organize one's own work.

Course objective

Preparation of the diploma thesis, including deepening knowledge and skills related to the chosen topic, conducting scientific research, and presenting the results of that research.

Course-related learning outcomes

Knowledge:

The student possesses advanced and in-depth knowledge in the field of transport engineering, including theoretical foundations, tools, and means used to solve basic engineering problems

The student has knowledge of development trends and the most significant recent achievements in the field of transport and IT systems, as well as in other selected related scientific disciplines

The student has knowledge of ethical codes related to scientific research conducted in the field of transport systems

Skills:

The student is able to obtain information from literature, databases, and other sources, integrate it, interpret and critically evaluate it, draw conclusions, and formulate well-justified opinions

The student is able to plan and conduct experiments, including measurements and computer simulations, interpret the obtained results, draw conclusions, as well as formulate and verify hypotheses related to complex engineering problems and basic research problems

The student is able to use analytical, simulation, and experimental methods to formulate and solve engineering tasks and basic research problems

The student is able - when formulating and solving engineering tasks - to integrate knowledge from various areas of transport and computer science (and, if necessary, also from other scientific disciplines), and to apply a systems approach that also takes non-technical aspects into account

The student is able to critically analyze existing technical solutions and propose their improvements (enhancements)

The student is able - by applying, among others, conceptually new methods - to solve complex tasks in the field of transport engineering, including non-standard tasks and those involving a research component

The student is able to prepare and present a scientific study presenting research results or an oral presentation on specific issues in the field of transport engineering and its supporting tools

The student is able to identify directions for further learning and carry out the process of self-education

Social competences:

The student is prepared to critically assess their knowledge and understands that in transport engineering and computer science, knowledge and skills quickly become outdated

The student understands the importance of using the latest knowledge in transport engineering to solve research and practical problems and is prepared to seek expert opinions in case of difficulties with solving a problem independently

The student understands the importance of dissemination activities related to the latest achievements in transport engineering and transport systems, and is ready to initiate actions for the benefit of the community and public interest

The student is aware of the need to develop their professional achievements, uphold the professional ethos, and adhere to the principles of professional ethics

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Completion of the course based on:

- assessment of the diploma thesis,
- regularity of its implementation,
- technical problem solving skills.

Programme content

Compatible with the topic of the diploma thesis.

Course topics

Compatible with the topic of the diploma thesis.

Teaching methods

Discussion with the student about problems occurring during diploma thesis preparation, solving research problems or providing sources in the literature to solve problems.

Bibliography

Basic:

Scientific and technical literature necessary to prepare the thesis

Additional:

-

Breakdown of average student's workload

	Hours	ECTS
Total workload	290	10,00
Classes requiring direct contact with the teacher	10	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	280	9,50