COURSE DESCRIPTION CARD - SYLLABUS

Course name
Diploma seminar II [S1MNT1>SD2]

Course

Field of study
Mathematics of Modern Technologies

Year/Semester
4/7

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
0

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
30

Number of credit points

15,00

Coordinators

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Lecturers

Prerequisites

Student which starting this subject should have basic knowledge, skills (including performing calculations and measurements of electrical and non-electrical quantities, writing computer programs) and competences (including verbal communication and teamwork) acquired in earlier years of study that enable the realization of an engineering diploma thesis.

Course objective

The aim of the course is to explain the essence of an engineering diploma thesis, to present the issues proposed in the diploma theses in the field of mathematics and data analysis, to choose the topic of the diploma thesis by students, and also to learn the principles of its editing and conducting literature recognition in the field of thesis.

Course-related learning outcomes

Knowledge:

• has knowledge of of advanced mathematics and the latest solutions used in data analysis in the context of the subject of the thesis [K_W01(P6S_WG), K_W04(P6S_WG), K_W11(P6S_WG)];
• has knowledge of the basic techniques, methods and tools used in the implementation of engineering tasks in the field of thesis being implemented [K_W 01(P 6S_W G), K_W 04(P 6S_W G), K_W 11(P 6S_W G)];
• has knowledge of the general principles of ethics, copyright and related rights in relation to the thesis being carried out [K_W01(P6S_WG), K_W04(P6S_WG), K_W11(P6S_WG)].

Skills:
• knows how to find useful literature sources (also in English) and make a critical assessment of their usefulness in the subject of the engineering work [K_U 08(P 6S_U W), K_U 12(P 6S_U W), K_U 14(P 6S_U K),
K_U15(P6S_UK), K_U17(P6S_UU)];
• knows how to prepare and, in a manner understandable to a wide audience, to present an oral presentation in the field of mathematics and data analysis [K_U 08(P 6S_U W), K_U 12(P 6S_U W), K_U 14(P 6S_U K),
K_U15(P6S_UK), K_U17(P6S_UU)];
• knows how to use the acquired knowledge to creatively analyze and solve various engineering problems in the field of mathematics and data analysis [K_U 08(P 6S_U W), K_U 12(P 6S_U W), K_U 14(P 6S_U K),
K_U15(P6S_UK), K_U17(P6S_UU)];
• can see non-technical aspects, including ethical and legal aspects, when formulating and solving engineering problems [K_U 08(P 6S_U W), K_U 12(P 6S_U W), K_U 14(P 6S_U K), K_U 15(P 6S_U K), K_U 17(P 6S_U U)]

Social competences:
• isawareoftheresponsibilityfortheirownwork,isopentoexchangeofviews,acceptscriticalcomments on the subject of own research [K_K01(P 6S_KK), K_K02(P 6S_KK), K_K04(P 6S_KR), K_K05(P 6S_KR)].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Projects/seminars: knowledge and skills acquired as part of the seminar classes are verified by:
• observation and assessment of class activity, especially during discussions on analyzed issues;
• assessment of knowledge and skills needed to implement an individual topic of engineering work based on a written paper (each student prepares a paper of 10 pages);
• assessment of the content and presentation form of the overall topic of engineering work;
• observation and assessment of student work regularity.

Programme content

Definition and essence of the diploma thesis, including team work and its connection with the provisions of study regulations of Poznan University of Technology. Discussion of the thematic scope of engineering theses. Rules for the implementation of works, individual consultations and the use of literature resources. Guidelines and recommendations for editing engineering works. Principles of preparing the presentation of the thesis and preliminary discussing how to implement the selected topic (as part of the course, students prepare one paper on the issues raised in their thesis).

Course topics

Definition and essence of the diploma thesis, including team work and its connection with the provisions of study regulations of Poznan University of Technology. Discussion of the thematic scope of engineering theses for the field of mathematics and data analysis. Rules for the implementation of works, individual consultations and the use of literature resources. Guidelines and recommendations for editing engineering works (document formatting, graphic elements, document correction). Principles of preparing the presentation of the thesis and preliminary discussing how to implement the selected topic (as part of the course, students prepare one paper on the issues raised in their thesis). Discussing the principles of citation as well as copyright and related law when writing theses.

Teaching methods

Projects/seminars: multimedia presentation supplemented with comments and examples given on the board, analysis / discussion of various methods (including unconventional) solutions of examplary problems and specific problems indicated in the topics of theses of individual students, taking into account various aspects of the problems solved: technical, economic, ecological, legal and social

Bibliography

Basic:
• Szczegółowe wytyczne dotyczące redagowania pracy dyplomowej opracowane w Instytucie promotora;
• Literatura specjalistyczna dotycząca tematyki pracy.

Additional:
• Przykładowe prace dyplomowe inżynierskie;

Breakdown of average student's workload

	Hours	ECTS
Total workload	380	15,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	350	14,00