COURSE DESCRIPTION CARD - SYLLABUS

Course name
Passing project [S2IBio1-BiIW>PP]

Course

Field of study
Biomedical Engineering

Year/Semester
1/2

Area of study (specialization)
Bionics and Virtual Engineering

Profile of study
general academic

Level of study
second-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
45

Number of credit points

4,00

Coordinators

dr inż. Piotr Posadzy
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Lecturers

Prerequisites

Knowledge: Has general knowledge covering key topics in biomedical engineering. Skills: It has the ability to solve basic problems concerning the selection of a method for solving tasks and planning an experiment. Social competences: Understand the need to expand one"s knowledge and skills and to transfer the acquired knowledge of bioengineering to society..

Course objective

1. To broaden and structure the knowledge of biomedical engineering. 2. To develop problem-solving skills and to acquire knowledge of problem-solving methods independently 3. To improve the ability to present the progress of their own work while maintaining factual and linguistic correctness.

Course-related learning outcomes

Knowledge:
The student has knowledge about development trends and the most significant new achievements in the field of science and scientific disciplines, appropriate for the studied major and related scientific disciplines.
Knows and understands basic concepts in modelling biological structures and processes and

biomaterials.
Has knowledge of information systems in medicine, in particular the types and applications of medical imaging.

Skills:
Can acquire information from a variety of sources and integrate and critically evaluate it.
Can prepare and deliver oral and written presentations on specific topics in biomedical engineering.
Students will be able to assess the usefulness and possibility of application of new developments (techniques and technologies) in the field of study.
Can use analytical, simulation and experimental methods to formulate and solve engineering tasks and simple research problems in biomedical engineering.

Social competences:
Can define priorities for the realization of a task.
He understands the need for lifelong learning; he is able to inspire and organise the learning process of others.
Is ready to critically evaluate his/her knowledge and perceived contents.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
1. Assessment of individual work related to the implementation of the assigned topic of the transitional work.
2. Assessment of the written work containing a description of the project in terms of: literature review, assumptions and objectives of the work, description of methods to solve the problem, final conclusions.
3. Presentation of issues related to the received project.

Programme content

1. To get acquainted with the subject of the thesis.
2. To become familiar with the requirements for transitional theses and the process of completing the thesis. Review and discussion of the topics of the proposed transitional theses.
3. Determination of individual topics for the thesis.
4. Progress report on assigned projects.
5. Presentation and discussion of the obtained results.

Course topics

none

Teaching methods

1. Project: individual project tasks, presentation of research results, discussion.

Bibliography

Basic
1. Tadeusiewicz R., Augustyniak P., Podstawy inżynierii biomedycznej, Wydawnictwo AGH, Kraków 2009.
2. Pawlicki G., Podstawy inżynierii medycznej, OWPW, Warszawa 1997.
3. Nałęcz M., Biocybernetyka i inżynieria biomedyczna 2000, EXIT, 2000
Additional
1. Tadeusiewicz R., Inżynieria biomedyczna. Księga współczesnej wiedzy tajemnej w wersji przystępnej i przyjemnej. Wydawnictwo AGH Kraków, 2008.
2. E. Piętka (ed.), Innovations in Biomedical Engineering, Advances in Intelligent Systems and Computing, 623, Springer, 2017.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	45	2,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	55	2,00