



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Passing project [S1IBio1E>PP]

Course

Field of study

Biomedical Engineering

Year/Semester

3/6

Area of study (specialization)

–

Profile of study

general academic

Level of study

first-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

45

Number of credit points

4,00

Coordinators

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Lecturers

Prerequisites

Basic knowledge from mechanics, construction, electronics, programming, material science, physics and chemistry, material processing technology, ability of logical thinking, use of information from library and internet, awareness of necessity to learn and gain new knowledge

Course objective

Gaining ability to solve problems individually and in groups regarding tasks from biomedical constructions, manufacturing and choice of materials. Gaining abilities of solving problems aimed to a particular customer with certain disfunctions, in details applying elements of biomechanics as well as computer aided design and analysis in biomedical engineering. Gaining abilities of choosing and applying materials and methods of design and manufacturing in biomedical engineering.

Course-related learning outcomes

Knowledge:

A student widens knowledge regarding manufacturing, construction and application of biomedical devices [K_W09, K_W10, K_W19].

Skills:

A student gains ability to solve tasks that are included in project [K_U01].

Social competences:

A student gains ability to plan and realize research regarding biomedical devices [K_U14, K_U16].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

A condition to pass the classes is a positive note from project

Programme content

Analysis of references regarding project

Elaboration of concept.

Elaboration and analysis of results.

Course topics

none

Teaching methods

Project: solving practical issues, presentation of results.

Bibliography

Basic:

1. Dobrzański L.A., Materiały inżynierskie i projektowanie materiałowe: podstawy nauki o materiałach i metaloznawstwo, WNT, Warszawa, 2006
2. Tadeusiewicz R., Augustyniak P. (red), Podstawy Inżynierii Biomedycznej t. 1 i 2, Wydawnictwo AGH, 2009
3. Street L.J., Introduction to Biomedical Engineering Technology, CRC Press, 2017
4. Ritter A.B., Hazelwood V., Valdevit A., Ascione A.N., Biomedical Engineering Principles, CRC Press, 2018
5. Montaigne F., Medicine by Design: The Practice and Promise of Biomedical Engineering, Johns Hopkins University Press, 2006.

Additional:

1. Dorf R.C., The Engineering Handbook, CRC Press, 2004.
2. Kędzior K., Knapczyk J., Morecki A., Teoria mechanizmów i manipulatorów: podstawy i przykłady zastosowań w praktyce, WNT, Warszawa, 2002.
3. Oczóś K.E., Kawalec A., Kształtowanie metali lekkich, WNT Warszawa, 2012.

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