COURSE DESCRIPTION CARD - SYLLABUS

Course name
Trends in biomedical engineering [S1IBio1>TRIB]

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
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

dr inż. Martyna Białecka
martyna.bialecka@put.poznan.pl

Lecturers

Prerequisites

Knowledge: basic knowledge gained during of the study. Skills: logical thinking, using information obtained from the library and the Internet. Social competences: understanding the need to learn and acquire new knowledge.

Course objective

The objective of the course is to show students trends in the field of biomedical engineering, in particular in engineering biomechanics, design and manufacture of medical devices, computer analysis of medical data, as well as ensuring contact with the world of medicine and industry related to the biomedical engineering.

Course-related learning outcomes

Knowledge:
The student should know the contemporary trends in the field of biomedical engineering and in its specific areas.

Skills:
The student is able to indicate which techniques learned during the studies can be applied in selected

technical problems in the field of medicine and biomedical engineering.

Social competences:
The student is aware of the importance of non-technical aspects of engineering activities.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Completion of the lecture based on the points obtained on the test during the final classes.
Passing requires more than 50% of points:> 50% - dst,> 60% - dst plus,> 70% - db,> 80% - db plus,> 90% of points - very good

Programme content

Development trends in selected areas of biomedical engineering.

Course topics

1. Trends of biomedical engineering in the field of engineering biomechanics.
2. Trends of biomedical engineering in the field of designing and manufacturing medical devices.
3. Trends of biomedical engineering in the field of computer-aided work of doctors.
4. Lectures by invited guests in the field of medicine and biomedical engineering.

Teaching methods

Multimedia presentation, discussion.

Bibliography

Basic:
Praca zbiorowa pod red. R. Tadeusiewicza, P. Augustyniaka, Podstawy inżynierii biomedycznej, t. 1 i 2, Wydawnictwa AGH, Kraków 2009 [in Polish].
Praca zbiorowa pod red. R. Tadeusiewicza, Inżynieria biomedyczna. Księga współczesnej wiedzy tajemnej w wersji przystępnej i przyjemnej, Wydawnictwa AGH, Kraków 2008 [in Polish].
R. Tadeusiewicz, Biocybernetyka. Metodologiczne podstawy dla inżynierii biomedycznej, Wydawnictwa Naukowe PWN, Warszawa 2013 [in Polish].

Additional:
J. Enderle, S.M. Blanchard, J.D. Bronzino, Introduction to Biomedical Engineering [in Polish].
Cykl książek z serii Biocybernetyka i inżynieria biomedyczna pod redakcją M. Nałęcza, Polska Akademia Nauk, Akademicka Oficyna Wydawnicza EXIT [in Polish].
Cykl książek z serii Inżynieria biomedyczna. Podstawy i zastosowania pod redakcją W. Torbicza, Polska Akademia Nauk, Akademicka Oficyna Wydawnicza EXIT [in Polish].

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50