COURSE DESCRIPTION CARD - SYLLABUS

Course name
Clinical application of materials and ergonomics in dentistry [S1IBio1>KZM]

Course

Field of study
Biomedical Engineering

Year/Semester
2/4

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture
15

Laboratory classes
15

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

- Basic knowledge from biology and chemistry. - Logical thinking, sourcing information from the library and the internet. - Understanding the need to learn and acquire interdisciplinary knowledge.

Course objective

Knowing selected biomaterials as implants, pre-acquainted with the circumstances of creation and practical use of biomaterials as implant in the biological life cycle.

Course-related learning outcomes

Knowledge:
1. Student has basic knowledge of engineering design and engineering graphics, allowing to design objects and processes, systems in terms of systems, machine elements; formulate and analyze problems; look for solution concepts.
2. Student has knowledge of dental biomaterials thanks to which he can classify and describe dental materials.
3. Student has knowledge of the technique and organ of engineering biomechanics in the field of dentistry in terms of ergonomics.

Skills:
1. The student is able to obtain information on the area of medical knowledge.
2. The student is able to assess the medical conditions in the field of biomedical engineering.
3. The student is able to integrate the obtained information, interpret and draw conclusions.

Social competences:
1. The student is aware of the importance and understanding of non-technical aspects of engineering activities.
2. Student is able to set priorities for the implementation of a specific project.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture
Credit based on a test consisting of 50 MCQ multiple-choice questions (if the answer is correct, at least 60% of the answers at the end of the semester (grading scale: <60% -ndst, 60% -satisfactory,> 75% - enough) good, 80% -good, 85% -more good, 90% -very good)
Lab
Assessment of the report and written answer for each laboratory exercise according to the instructions of the laboratory teacher. Obtaining a pass on the basis of a positive mark from the answers and the report and the MCQ test assessed on the same scale as the lecture part.

Programme content

Clinical applications of biomaterials and ergonomic principles in dental practice.

Course topics

Lecture
1. Ergonomic postulates and rules of work at the dental office.
2. Trends in modifying the construction of dental units - negative and positive solutions by engineers for dentists.
3. Dental equipment and the awareness of damage to the locomotor system among members of the dental team.
4. The role of fluorides taking into account the environment and human diet.
5. The most important diseases of the oral cavity - etiology, course, treatment, prognosis. The use of dental prophylaxis - analysis based on laboratory and clinical tests.
Lab
1. CAD-CAM technologies and their application in modern restorative dentistry.
2. Comparison of the properties of resin-modified glass ionomer cements and compomers.
3. Means for individual and professional dental prophylaxis against diseases of the oral cavity.
4. Endodontic treatment of tooth root canals and dental endodontic materials.
5. Assessment of human anthropometric parameters necessary for work at a dental office.

Teaching methods

1. Lecture: multimedia presentation.
2. Laboratory exercises: conducting experiments, working in teams, discussion.

Bibliography

Basic:
1. Combe E.C.: Wstęp do materiałoznawstwa stomatologicznego. Sanmedica, Warszawa 1997 [in Polish].

Additional:
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Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,00
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)	20	1,00