



Subject card

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|---|---|--|--|-------------------------------------|--|------------|-----|
| Subject name and code | Chemistry and Biochemistry, PG_00055741 | | | | | | |
| Field of study | Mechanical and Medical Engineering | | | | | | |
| Date of commencement of studies | October 2022 | | Academic year of realisation of subject | | 2022/2023 | | |
| Education level | first-cycle studies | | Subject group | | Obligatory subject group in the field of study | | |
| Mode of study | Full-time studies | | Mode of delivery | | at the university | | |
| Year of study | 1 | | Language of instruction | | Polish | | |
| Semester of study | 2 | | ECTS credits | | 4.0 | | |
| Learning profile | general academic profile | | Assessment form | | assessment | | |
| Conducting unit | Institute of Mechanics and Machine Design -> Faculty of Mechanical Engineering and Ship Technology | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | Ewa Stelmańska | | | | |
| | Teachers | | Ewa Stelmańska | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 30.0 | 0.0 | 15.0 | 0.0 | 0.0 | 45 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | | Participation in consultation hours | | Self-study | SUM |
| | Number of study hours | 45 | | 5.0 | | 50.0 | 100 |
| Subject objectives | Obtaining basic information on chemistry and biochemistry necessary for a medical engineer. | | | | | | |
| Learning outcomes | Course outcome | | Subject outcome | | Method of verification | | |
| | [K6_U01] he/she is able to acquire knowledge and self-studying, he/she is able to find needed information in specialist books, databases and other sources, he/she is able to integrate information and draw conclusions, he/she is able to communicate by using different technics in work and outside | | Student is able to find new biochemical information, make correct interpretation and express correct conclusion. | | [SU4] Assessment of ability to use methods and tools | | |
| | [K6_W03] he/she has skills in the field chemistry and biochemistry | | The student recognizes basic chemical compounds building the human body. He has a basic knowledge about metabolic processess undergoing in human body and understand the effect of external environment on these processess. | | [SW1] Assessment of factual knowledge | | |
| Subject contents | Chemical composition of human body. Structure and function of enzymes. Structure and metabolism of carbohydrates, lipids, proteins and nucleic acids. Structure and function of some hormones and vitamins. Iron metabolism and hemoglobin structure and function. Metabolic specificities and integration of metabolism. Effect of external environment on human metabolism. Aparatus and methods used in biochemical studies. | | | | | | |
| Prerequisites and co-requisites | Basic chemistry and biology. Knowledge of basic structure of the human body. Knowledge of basic principles of laboratory work. A coat is required for lab classes. | | | | | | |
| Assessment methods and criteria | Subject passing criteria | | Passing threshold | | Percentage of the final grade | | |
| | Final written test | | 60.0% | | 100.0% | | |
| Recommended reading | Basic literature | | Biochemia, seria "Lippincott's Illustrated Reviews", Denise R. Ferrier, Urban & Partner - Wrocław 2018. | | | | |

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| | Supplementary literature | Biochemia Harpera (ilustrowana), wydanie VII uaktualnione, PZWL Warszawa 2018 Postępy Biochemii (czasopismo Polskiego Towarzystwa Biochemicznego) |
| | eResources addresses | Adresy na platformie eNauczanie: |
| Example issues/ example questions/ tasks being completed | <p>Sample questions:</p> <p>1. which compound is classified as a steroid? (Select one best answer)</p> <p>a. collagen</p> <p>b. citrate</p> <p>c. cholesterol</p> <p>d. glycogen</p> <p>e.ATP</p> <p>Example topics:</p> <p>1.Effects of respiratory chain inhibitors on NAD- and FAD-dependent substrate oxidations.</p> <p>2. Role of vitamins in regulation of human metabolism.</p> | |
| Work placement | Not applicable | |

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