

Learning outcomes: Biomedical Engineering

Faculty: Biomedical Engineering

| Biomedical Engineering Level of studies: second-cycle studies Profile of studies: full- time studies | |
|---|--|
| symbol | Content of the learning outcome |
| Knowledge: knows and understands | |
| K2A_W01 | concepts of medical and administrative information used in hospital information systems, as well as their digital representation and methods of acquisition, analysis, processing and transmission |
| K2A_W02 | key issues of biomedical materials, methods of biomaterials structure study, their mechanical, physical and chemical properties, as well as biological materials surface modification, including biomaterials used as scaffolds for tissue engineering, including interactions between implants and living tissue |
| K2A_W03 | newest development trends and technical achievements used in medicine both on the stage of diagnosis, therapy and rehabilitation as well as methods, techniques and tools used in Biomedical Engineering. |
| K2A_W04 | equipment life cycle and all their parts, which can wear relatively fast, depreciation |
| K2A_W05 | basic methods of computer modeling, designing and matching models to the experimental data and simulation of biological processes as well as the parameter identification methods and quality assessment of the models. |
| K2A_W06 | non-technical determinants of engineering activities, their application and consideration in the engineering practice. |
| K2A_W07 | typical technologies in the field of Biomedical Engineering |
| Skills: is able | |
| K2A_U01 | integrate knowledge of the fields of science and other disciplines related to biomedical engineering and obtained from literature, databases and other properly selected sources (also in English), and also taking into account the non-technical aspects, make the interpretation and critical evaluation, draw conclusions, formulate and justify opinions. |
| K2A_U02 | prepare and present oral presentations / research paper concerning specific issues in the field of biomedical engineering in polish or foreign language. |
| K2A_U03 | plan and organize work in a team, carry out experiments, in particular computer simulations, interpret the obtained results and draw conclusions. |

| | |
|---|---|
| K2A_U04 | use analytical, simulation and experimental methods during formulation and solving engineering tasks and research problems, as well as formulation hypotheses related to engineering problems |
| K2A_U05 | communicate using a variety of techniques in a professional and other environments, also in English (or other foreign language), relevant to the typical engineering tasks. |
| K2A_U06 | assess the usefulness and usability of the biomedical sciences and new technical achievements in medicine, and also suggest improvements in existing technical solutions. |
| K2A_U07 | assess the suitability of methods and tools (including devices as well as computer and information systems) for solving engineering tasks, make their critical analysis and functionality assessment. |
| Social competences: is ready for | |
| K2A_K01 | lifelong learning (PhD, postgraduate studies, courses) - raising professional, personal and social competence. |
| K2A_K02 | behaving in a professional manner, respect the rules of professional ethics and respect for cultural diversity and different points of view. |
| K2A_K03 | taking responsibility for their own work and the willingness to submit to teamwork rules and to take responsibility for collaborative tasks. |
| K2A_K04 | determining appropriate priorities for implementing the tasks formulated by itself or others. |
| K2A_K05 | thinking and acting in an entrepreneurial manner. |