

Course title:	Modern medical devices
Institute/Speciality:	FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY / Engineering of Technological Processes
Number of contacthours:	30 hours (lectures)
Course duration:	1 semester
ETCS credits:	2
Course description:	<p>The course aims: expanding knowledge of students to comprehensive overview of obtainment and characterization of modern medical devices (I, II, III class) especially with a therapeutic, diagnostic, and monitoring purposes. Course modules will cover the fundamental scientific and legal basis principles associated with designing, obtaining, and evaluating novel medical devices, especially dedicated to direct contact with human body. The course will also provide the students with necessary background for understanding standard characterization techniques used during biological evaluation of medical devices as well as risk management.</p> <p>Lectures content: Definition of medical devices, classification of medical devices (I, II, III class, associated risks/ Characterization of various medical devices types/ Modern methods of novel biomaterials design, synthesis and modification (polymeric, metallic, composite)/Standard methods for characterization of materials and medical devices which are expected to have direct or indirect contact with a patient (non-active, active, non-implantable, implantable)/Modern methods of diagnostic and monitoring medical devices design, production and evaluation.</p>
Literature:	<p>[1] Official Journal of the European Union, Regulation (EU) 2017/745 of the European Parliament</p> <p>[2] Recent advances in regenerative biomaterials, Dinglingge Cao, Jiandong Ding, Regenerative Biomaterials, 9, 2022</p> <p>[3] ISO 10993- Biological evaluation of medical devices</p>
Assessment method:	Final test
Prerequisites:	Student should have basic knowledge from inorganic and organic chemistry, material engineering and cell biology
Primary target group:	all specialties students (Chemical Engineering / Chemical Technology/ Biotechnology)
Lecturer:	dr inż. Julia Radwan-Pragłowska
Contact person:	dr inż. Julia Radwan-Pragłowska (julia.radwan-pragłowska@pk.edu.pl)
Deadline for application:	15th of January for students applying for spring semester
Remarks:	The course is selectable