

Course title:	3D printing (Additive Technologies)
Institute/Speciality:	Faculty of chemical engineering and technology
Number of contact hours:	15h (lectures) 30h (laboratory)
Course duration:	1 semester
ECTS credits:	3
Course description:	<p>The purpose of the course is to introduce students to the possibilities offered by 3D printing and 3D bioprinting. To familiarize students with various 3D printing techniques such as SLA, DLP, CLIP, SLS, PolyJet covering the assumptions of a given technology, printer construction as well as their advantages and disadvantages. Additionally, students will gain knowledge and skills to design models on their own and select the most advantageous printing technology along with the most optimal parameters.</p> <p>Lectures content: Familiarization with the 3D design environment, discussion, and analysis of available 3D printers, Creation of 3D object model according to design assumptions for optimization for 3D printing, Post-processing, the effect of post-processing on physical properties, Discussion and printing of developed models using selected printing technology, Analysis of the effect of printing parameters on the shape and dimensions of the printout</p>
Literature:	<p>[1] Chee Kai Chua, Wai Yee Yeong, "Bioprinting: Principles and Applications", Nanyang Technological University, Singapore, 2015</p> <p>[2] Roberto Bernasconi, "3D Printing Technologies", MDPI AG, 2022</p> <p>[3] Gebhardt Andreas ,Kessler Julia ,Thurn Laura, "3D Printing: Understanding Additive Manufacturing", HANSER, 2018</p> <p>[4] Tuhin Mukherjee, "Science and Technology of 3D Printing", MDPI AG, 2021</p>
Assesment method:	Final test
Prerequisites:	Basic knowledge of chemistry and spectroscopy
Primary target group:	Biotechnology students
Lecturer:	dr hab. inż. Joanna Ortyl, prof. PK
Contact person:	dr hab. inż. Joanna Ortyl, prof. PK (kontakt: jortyl@pk.edu.pl)
Deadline for application:	
Remarks:	This course is selectable