

<b>Course title:</b>	Bioprinting
<b>Institute/Speciality:</b>	Faculty of chemical engineering and technology
<b>Number of contact hours:</b>	15h (lectures) 30h (laboratory)
<b>Course duration:</b>	1 semester
<b>ECTS credits:</b>	3
<b>Course description:</b>	<p>The class will include introducing students to the idea of bioprinting, its advantages, and its application. The class will include a discussion of the basic principles of bioprinting. Students will be introduced to activities including pre-bioprinting, bioprinting, and post-bioprinting. They will also be introduced to various approaches to bioprinting. The types of printers used in bioprinting and the application of bioprinting technology in the world around us will also be presented.</p> <p><b>Lectures content:</b> definition of bioprinting, differences between bioprinting and classical 3D printing, assumptions of bioprinting, pre-bioprinting, bioprinting and post-bioprinting, approaches to bioprinting: biomimicry, autonomous self-assembly, mini-tissue, construction and types of 3D printers, applications of bioprinting</p>
<b>Literature:</b>	<p>[1] Chee Kai Chua, Wai Yee Yeong, "Bioprinting: principles and application", World Scientific Publishing Company, 2014</p> <p>[2] Kenneth Douglas, "Bioprinting: To Make Ourselves Anew", Oxford University Press, 2021</p> <p>[3] Ibrahim Tarik Ozbolat, "3D Bioprinting", Academic Press, 2016</p> <p>[4] Maika G. Mitchell, "Bioprinting Techniques and Risks for Regenerative Medicine", Academic Press, 2017</p>
<b>Assesment method:</b>	Final test
<b>Prerequisites:</b>	Basic knowledge of chemistry and spectroscopy
<b>Primary target group:</b>	Biotechnology students
<b>Lecturer:</b>	dr hab. inż. Joanna Ortyl, prof. PK
<b>Contact person:</b>	dr hab. inż. Joanna Ortyl, prof. PK (kontakt: jortyl@pk.edu.pl)
<b>Deadline for application:</b>	
<b>Remarks:</b>	This course is selectable