

Subject name	Tissue Cultures for Crop Improvement	
Subject code	E.1.TCCI.SC.ECTIE.O	
Department	Genetics, Plant Breeding and Seed Science	
Faculty	Faculty of Biotechnology and Horticulture	
Subject supervisor/Lecturer	Kielkowska Agnieszka, Ph.D.	
General information	Teaching period	Semester /winter
	ECTS credit	6
	Lectures total	20
	Lab classes	10
Objective and general description	To impart knowledge to the students on the various techniques of plant tissue culture, principles of plant biotechnology and their role in crop improvement. Valuable hands-on training to those interested in careers in plant breeding and biotechnology.	
Lectures 10 x 2 hours	<ol style="list-style-type: none"> 1. Introduction, history, major concepts and importance 2. In vitro pollination and fertilization 3. Micropropagation and somatic embryogenesis 4. Haploid production 5. Somaclonal variation 6. Meristem culture and pathogen-free plants 7. Interspecific crossing and embryo-rescue 8. Somatic hybridization 9. In vitro selection 10. Critical review of selected articles 	
Lab classes 5 x 2 hours	<ol style="list-style-type: none"> 1. In vitro pollination 2. Micropropagation 3. Androgenesis and gynogenesis 4. Embryo-rescue 5. Protoplast cultures 	
Literature	<ol style="list-style-type: none"> 1. B. N. Sathyanarayana 2007. Plant Tissue Culture: Practices and New Experimental Protocols I. K. International Pvt Ltd 2. Plant Propagation by Tissue Culture 2008. Edited by Edwin F. George, Michael A. Hall, Geert-Jan De Klerk. Springer 3. Internet resources 	