

Subject name	Plant Development	
Subject code	R.F1a.PDV.SM.ROSA Y	
Department	Plant Physiology	
Faculty	Agriculture and Economics	
Subject supervisor/Lecturer	Dr. Renata Bączek-Kwinta	
General information	semester	summer
	ECTS credits	6
	Lectures total	15 hrs
	Laboratories/field classes	7/8 hrs
Objective and general description	<p>Plant Development offers a dynamic approach to the life processes of various plant taxa, the environmental factors affecting it, and practices which are used to regulate it to increase crop production. Topics to be covered include plant life forms, alternation of generations, structure of some organs of higher plants, reproductive development, seed dormancy, influence of environment on development, and genetic control of development.</p> <p>Lectures:</p> <ol style="list-style-type: none"> 1. Plants as you can see – plant life-form. 2. Plant ancestors and green algae. 3-5. Mosses, ferns and their life cycles. Conifers, ginkgos and other gymnosperms. 6. Seed protection means success – biology of flowering plants. 7/8. Plant hormones. 9. Flowering plants – internal development and growth. Coevolution of plants and insects. 10. Flowering plants – Vegetative reproduction. 11. Seed dormancy and its implications. 12. How to adjust to the sun - plant movements. 13. Developmental response to stress. 14. Senescence as a part of life. 15. Molecular biology of growth and development. <p>Classes: Laboratory (1-7)</p> <ol style="list-style-type: none"> 1. Leaf growth of monocots and dicots. Impact of temperature and light on plant growth and development. 2. Impact of auxin, gibberelin and cytokinin on plant growth and development. Practical use of hormones and growth regulators. 3-4. Seed dormancy and its breakdown. Impact of plant growth regulators, oxidants and natural terpenoids on seed germination. 5. Plant movements: tropisms, nastic movements, taxis. 6-7. Effect of mycorrhizal and rhizobial inoculation on plant condition. Arabidopsis thaliana propagation and identification of mutants. Tissue culture: callus generation. 8-15 Field trip 8-10 Identification of mono- and dicots, angio- and gymnosperms, geophytes etc., 11-15 Analysis of the impact of environmental factors on plant growth and development 	

Assessment method	Classes: written report from classes; evaluation of student presentations; written tests Lectures: written examinations
References	Taiz L., Zeiger E. (eds) Plant Physiology. 2006, Sinauer Associates, Inc., Sunderland.