

<b>Subject name</b>	<b>Plant Cytogenetics</b>	
<b>Subject code</b>	<b>E.1z.PCY.SC.ECTIE.O (winter)</b> <b>E.11.PCY.SC.ECTIE.O (summer)</b>	
<b>Department</b>	<b>Institute of Plant Biology and Biotechnology</b>	
<b>Faculty</b>	<b>Faculty of Biotechnology and Horticulture</b>	
<b>Subject supervisor/Lecturer</b>	<b>Ewa Grzebelus, Ph.D.</b>	
<b>General information</b>	<b>Teaching period</b>	<b>1 semester /winter or summer semester</b>
	<b>ECTS credit</b>	<b>6</b>
	<b>Lectures total</b>	<b>15</b>
	<b>Lab classes</b>	<b>15</b>
<b>Objective and general description</b>	Plant chromosome structure, the role of plant chromosomal rearrangements, use of cytogenetics to map plant genomes, classical and molecular methods in karyotype analysis.	
<b>Lectures</b> <b>5 x 3 hours</b>	<ol style="list-style-type: none"> <li>1. History of cytogenetic studies</li> <li>2. Cell divisions – mitosis and meiosis</li> <li>3. Structure and function of chromosomes in Eucaryota</li> <li>4. Chromosome aberrations</li> <li>5. Classical and advanced karyotype analysis</li> </ol>	
<b>Lab classes</b> <b>5 x 3 hours</b>	<ol style="list-style-type: none"> <li>1. Mitosis observation. Different methods of mitotic chromosome preparations and their staining</li> <li>2. C-banding of onion and barley chromosomes</li> <li>3. Meiosis observation and preparation of meiotic chromosomes</li> <li>4. Fluorescence in situ hybridization</li> <li>5. Chromosome imaging</li> </ol>	
<b>Literature</b>	<ol style="list-style-type: none"> <li>1. Bass H.W., Birchler J.A. (eds.), 2012. Plant cytogenetics. Genome structure and chromosome function. Springer</li> <li>2. Singh R.J., 2003. Plant cytogenetics. CRC Press</li> </ol>	