

<b>Subject name</b>	<b>Plant virology</b>	
<b>Subject code</b>	<b>E.1.PLAN.SC.ECRIE.O</b>	
<b>Department</b>	<b>*Unit of Botany and Plant Physiology and **Unit of Genetics, Plant Breeding and Seed Science; Institute of Plant Biology and Biotechnology</b>	
<b>Faculty</b>	<b>Faculty of Biotechnology and Horticulture</b>	
<b>Subject supervisor/Lecturer</b>	<b>*Barbara Nowak Ph.D., *Zbigniew Gajewski Ph.D., **Magdalena Klimek-Chotecka Ph.D.</b>	
<b>General information</b>	<b>Teaching period</b>	<b>summer semester</b>
	<b>ECTS credits</b>	<b>6</b>
	<b>Lectures total</b>	<b>10</b>
	<b>Lab practicals</b>	<b>20</b>
<b>Objective and general description</b>	The objective of the course is to familiarize with the specificity of plant viruses in terms of their structure, transmission and detection with special respect to means of elimination and avoidance.	
<b>Lectures</b> <b>10 × 1 hour</b>	<ol style="list-style-type: none"> <li>1. Structure of viruses and viroids. Classification system and taxonomy.</li> <li>2. Description of the most important families and species of viruses.</li> <li>3. Model of replication and movement of virus particles.</li> <li>4. Symptomatology.</li> <li>5. Vectors and means of transmission.</li> <li>6. Virus detection and identification: biological and serological assays.</li> <li>7. Application of electron microscopy techniques in plant virology.</li> <li>8. Molecular methods in plant virus detection.</li> <li>9. Virus variability and evolution. Ecology and epidemiology.</li> <li>10. Resistance to virus infections. Economic importance of virus diseases and control strategies.</li> </ol>	
<b>Laboratories</b> <b>20 hours</b>	<ol style="list-style-type: none"> <li>1. Detection of viruses: symptomatology and biological test - part I: mechanical transmission. (3 h);</li> <li>2. Biological test - part II: results. Stability of viruses in sap (TIP, DEP, LIV). Separation of viruses from mixtures using biological means (in plant) and TIP - thermal inactivation point - part I, performance. (3 h)</li> <li>3. Separation of viruses - part II: results and interpretation. Serological detection - DAS ELISA performance - part I. (4 h)</li> <li>4. DAS ELISA performance - part II - results and interpretation. (3 h);</li> <li>5. Transmission electron microscopy - plant tissue preparation for virus observation. (2 h)</li> <li>5. Molecular methods: RT-PCR for virus detection. (2 + 3 h)</li> </ol>	

**References**

Khan J.W., Dijkstra J. 2006. Handbook of plant virology.