

4.00 credits	27.5 h + 15.0 h	Q2
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Teacher(s)	Bragard Claude ;Declerck Stephan ;Legrève Anne (coordinator) ;
Language :	French > English-friendly
Place of the course	Louvain-la-Neuve
Learning outcomes	
Evaluation methods	Learning outcomes are assessed via a written exam covering the theoretical and practical parts of the course as well as through participation in practical work (reports).
Teaching methods	Teaching is given face-to-face.
Content	<p>The aim of the course is to describe the communication strategies and physiological and molecular mechanisms of microorganisms and plant interaction. The course is subdivided into five main parts illustrating antagonistic or symbiotic relationships.</p> <p>a) Plant pathogenic viruses. Typical cycle of a virus, viral genome, classification, movement in plant. Interaction with vectors and transmission. Interference with the host, viral pathogenesis.</p> <p>b) Phytopathogenic and endophytic bacteria. Typical cycle of a phytopathogenic bacterium, bacterial genome, examples. Determinants of virulence, hypersensitivity. Secretion systems, effectors, interaction with the host plant.</p> <p>c) Phytopathogenic fungi. Characteristics of fungi: structure, chemical and biochemical characteristics, vegetative growth and life cycle. Sources of population diversity. Plant-pathogen interactions: infection strategies, pathogenesis, plant defence mechanisms.</p> <p>(d) Plant pathogenic nematodes. Life cycles, anatomical and morphological characteristics, infection mechanisms and plant response.</p> <p>(e) Mycorrhizal fungi and symbiotic bacteria (Rhizobium). Life cycles, molecular mechanisms of recognition between plants and symbionts, colonisation processes and establishment of interfaces. exchanges, evolutionary similarities/dissimilarities between bacterial and fungal symbioses. Hypotheses concerning the asymbiotic nature of certain plants.</p>
Inline resources	Moodle
Bibliography	Syllabus et/ou support diapos fournis via Moodle Site web dédié, thesaurus d'images, échantillons. Ouvrages de référence : Matthew's Plant Virology, '
Other infos	This course can be given in English.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Agricultural Bioengineering	BIRA2M	4		