


4 credits

37.5 h + 15.0 h

Q2

Teacher(s)	Mahillon Jacques ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	<i>The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.</i>
Aims	<i>The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".</i>
Evaluation methods	<ul style="list-style-type: none"> - Oral exam (with a written preparation) containing three parts: <ul style="list-style-type: none"> > A theoretical development of a specific section of the course, > An development requiring the integration of different parts of the course, > A series of definitions/concepts calling for short answers. - Evaluation of the presentation made by certain students (on a voluntary basis) that have presented a Microstory (see above), on a subject related to the course and chosen in interaction with the teacher. This evaluation replaces part of the question dealing with the definitions/concepts
Teaching methods	<ul style="list-style-type: none"> - The main activity is given as ex cathedra courses, which include many practical examples and case studies, taken from human and animal health, the environment or biotechnological applications. - At the beginning of each lecture, a recapitulation (ca. 15 min) of the main messages from the previous course is given in English. - On a voluntary basis, a dozen students have the possibility to present, at the end of each course, a « Microstory » (ca. 15 min), dealing with aspects related to the course. - Practical work (mandatory activity): <ul style="list-style-type: none"> > Groups of 2 students, > Case study under the supervision of an assistant/technician team, > Each student has the opportunity to perform the main basic operations related to the observation and control of the micro-organisms, > Writing of an individual report, in the laboratory notebook.
Content	<p>In order to achieve the objectives of this course, the following themes will be developed, in an integrated manner:</p> <ul style="list-style-type: none"> - The microbial world in the reality of its size and diversity, the multiplicity of its habitats and relationships with the environment, including the other organisms. - The world of viruses and bacteriophages and the methods developed for their use or control. - The potential of genetic adaptation of microbes and, in particular, the specificity of their sexuality. - The strategies allowing the most efficient control of micro-organisms, using either prophylactic or curative methods. - The industrial use of microbes in the fields of agro-food industry, environment or medicine. - The past, present and future use of micro-organisms in biological engineering. <p>The main objectives of the practical work, mostly performed by the students themselves, are: i) macroscopic and microscopic observations of bacteria, fungi and bacteriophages, and ii) the use of the basic techniques of descriptive microbiology.</p>
Bibliography	<ul style="list-style-type: none"> • Dias du cours sur MOODLE <p>Wiley, J., Sherwood, L., & Woolverton C. (2008) Prescott/Harley/Klein's Microbiology (7th Edition) WCB McGraw-Hill Publishers 1,216 pp. - ISBN-13 9780073302089.</p> <p>Madigan, M., Brock, T., Martinko, J.M., Dunlap, P. & Clark, D.P. (2008) Brock Biology of Microorganisms (12th Edition) Benjamin-Cummings Publishing Company Hardback – 1,136 pp - ISBN 0132324601.</p>
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Bioengineering	BIR1BA	4	LBIR1250	
Minor in Scientific Culture	LCUSC100I	4		