


Teacher(s)	Gillis Annika ;
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>
Learning outcomes	
Evaluation methods	<p>- The evaluation consists of a final written exam in the form of Multiple Choice Questions (MCQ) with Multiple Responses and including:</p> <ul style="list-style-type: none"> • the theoretical course, including the content of the <i>Microstories</i> (see below) (18/20) • the practical work (2/20) <p>The evaluation results in a single score. In case of failure, the entire exam must be retaken.</p> <p>- Evaluation of the presentation made by certain students (on a voluntary basis) that have presented a <i>Microstory</i>, on a subject related to the course and chosen in interaction with the teacher. The evaluation of this presentation represents a bonus of maximum 2 points on the final exam mark.</p> <p>- Practical work (laboratory session):</p> <p>> By group of 2. Compulsory participation. A penalty of -1 point /20 on the final exam mark per practical session missed in the event of an unjustified absence.</p>
Teaching methods	<p>- The main activity is given as <i>ex cathedra</i> courses, which include many practical examples and case studies, taken from human and animal health, the environment or biotechnological applications.</p> <p>- At the beginning of each lecture, a recapitulation (ca. 15 min) of the main messages from the previous course is given in English.</p> <p>- On a voluntary basis, a dozen students have the possibility to present a « <i>Microstory</i> » (ca. 15 min), dealing with aspects related to the course.</p> <p>- Practical work (mandatory activity):</p> <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 • Willey J., Sherwood L., Woolverton C., Coyette J., Joseleau J.-P. & Perraud, R. (2018) <i>Microbiologie de Prescott</i> (5e édition). De Boeck supérieur. 980 pp - ISBN- 9782807308022. • Madigan M., Bender K., Buckley D., Sattley M., Stahl DA. & Brock T. (2022) <i>Brock Biology of Microorganisms</i> (16th Edition). Pearson Education. 1124 pp - ISBN 9781292404790.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Minor in Scientific Culture	MINCULTS	4		
Bachelor in Bioengineering	BIR1BA	4	LBIR1250	