


4.00 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>
Learning outcomes	
Evaluation methods	<ul style="list-style-type: none"> <li>- Written exam containing three parts:                             <ul style="list-style-type: none"> <li>&gt; A theoretical development of a specific section of the course,</li> <li>&gt; An development requiring the integration of different parts of the course,</li> <li>&gt; A series of definitions/concepts calling for short answers.</li> </ul> </li> <li>- Evaluation of the presentation made by certain students (on a voluntary basis) that have presented a <i>Microstory</i> (see above), on a subject related to the course and chosen in interaction with the teacher. The evaluation of this presentation replaces part of the question dealing with the definitions/concepts for a total of 3 points. If the voluntary student decides not to use this note, the note will be ignored.</li> </ul>
Teaching methods	<ul style="list-style-type: none"> <li>- 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.</li> <li>- At the beginning of each lecture, a recapitulation (ca. 15 min) of the main messages from the previous course is given in English.</li> <li>- 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.</li> <li>- Practical work (mandatory activity):                             <ul style="list-style-type: none"> <li>&gt; Groups of 2 students,</li> <li>&gt; Case study under the supervision of an assistant/technician team,</li> <li>&gt; Each student has the opportunity to perform the main basic operations related to the observation and control of the micro-organisms,</li> <li>&gt; Writing of an individual report, in the laboratory notebook.</li> </ul> </li> </ul>
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"> <li>- 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.</li> <li>- The world of viruses and bacteriophages and the methods developed for their use or control.</li> <li>- The potential of genetic adaptation of microbes and, in particular, the specificity of their sexuality.</li> <li>- The strategies allowing the most efficient control of micro-organisms, using either prophylactic or curative methods.</li> <li>- The industrial use of microbes in the fields of agro-food industry, environment or medicine.</li> <li>- The past, present and future use of micro-organisms in biological engineering.</li> </ul> <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"> <li>• Dias du cours sur MOODLE</li> </ul> <p>Wiley, J., Sherwood, L., &amp; 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. &amp; 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	Learning outcomes
Bachelor in Bioengineering	<a href="#">BIR1BA</a>	4	<a href="#">LBIR1250</a>	
Minor in Scientific Culture	<a href="#">MINCULTS</a>	4		