UCLouvain

# lbir1350

*2023*

# General Microbiology

| 4.00 credits | 37.5 h + 15.0 h | Q2 |
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| Teacher(s) | Gillis Annika ; |
| Language : | French |
| Place of the course | Louvain-la-Neuve |
| Prerequisites | *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.* |
| Learning outcomes | |
| Evaluation methods | - The evaluation consists of a **final written exam** in the form of Multiple Choice Questions (MCQ) with Multiple Responses and including:<br>• the theoretical course, including the content of the *Microstories* (see below) (18/20)<br>• the practical work (2/20)<br>The evaluation results in a single score. In case of failure, the entire exam must be retaken.<br>- Evaluation of the presentation made by certain students (**on a voluntary basis**) that have presented a *Microstory*, 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.<br>- Practical work (laboratory session):<br>> 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. |
| Teaching methods | - 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.<br>- At the beginning of each lecture, a recapitulation (*ca*. 15 min) of the main messages from the previous course is given in English.<br>- On a voluntary basis, a dozen students have the possibility to present a « *Microstory* » (*ca*. 15 min), dealing with aspects related to the course.<br>- Practical work (mandatory activity):<br>• Groups of 2 students<br>• Case study under the supervision of an assistant/technician team<br>• Each student has the opportunity to perform the main basic operations related to the observation and control of the micro-organisms<br>• Writing of an individual report, in the laboratory notebook. |
| Content | In order to achieve the objectives of this course, the following themes will be developed, in an integrated manner:<br>- 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.<br>- The world of viruses and bacteriophages and the methods developed for their use or control.<br>- The potential of genetic adaptation of microbes and, in particular, the specificity of their sexuality.<br>- The strategies allowing the most efficient control of micro-organisms, using either prophylactic or curative methods.<br>- The industrial use of microbes in the fields of agro-food industry, environment or medicine.<br>- The past, present and future use of micro-organisms in biological engineering.<br>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. |
| Bibliography | • Dias du cours sur MOODLE<br>• Willey J., Sherwood L., Woolverton C., Coyette J., Joseleau J.-P. & Perraud, R. (2018) *Microbiologie de Prescott* (5e édition). De Boeck supérieur. 980 pp - ISBN- 9782807308022.<br>• Madigan M., Bender K., Buckley D., Sattley M., Stahl DA. & Brock T. (2022) *Brock Biology of Microorganisms* (16th Edition). Pearson Education. 1124 pp - ISBN 9781292404790. |
| Faculty or entity in charge | AGRO |

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