


	<p>"inter'bacterial regulation : quorum sensing</p> <p>e. Mutations</p> <ul style="list-style-type: none"> - mutation types and frequency - detection of mutants (screening versus selection) <p>f. Bacteriophages</p> <ul style="list-style-type: none"> - , lytic cycle and lysogeny <p>g. Transfer of genetic information</p> <ul style="list-style-type: none"> - transformation, transduction, conjugation, transposition - limitation of genetic transfer (restriction-modification, the CRISPR-Cas system) <p>5. Anti-bacterial agents and antibiotics</p> <p>a. Disinfectants and antiseptics (chemicals, heat, filtration, UV and gamma radiations)</p> <p>b. Antibiotics: antibiotic examples, targets and mode of action</p> <ul style="list-style-type: none"> - metabolism - replication and transcription - Ribosomes - cell wall synthesis - membranes <p>c. Antibiotic resistance</p> <ul style="list-style-type: none"> - antibiotic inactivation - target modification or overproduction - target replacement - efflux pumps <p>d. Abuse and misuse of antibiotics, and origin of resistances</p> <p>C. Virology</p> <p>1. General introduction</p> <p>a. Historical discoveries in Virology</p> <p>b. Virion morphology and structure (components : nucleic acids, capsid, envelope...)</p> <p>c. The viral cycle : Attachment, uncoating and entry, gene expression, réplication, assembly, egress (according to the nature of the virus)</p> <p>d. Transmission and propagation</p> <p>e. Classification</p> <p>2. Selected examples illustrating the diversity of replication cycles according to the genome and virion properties.</p> <p>a. SV40, a small non-enveloped DNA virus</p> <p>b. poliovirus, a positive-stranded non-enveloped RNA virus</p> <p>c. influenza, a segmented, negative-straded RNA virus</p> <p>d. HIV, a lentivirus (example of retrovirus)</p> <p>Practicals on bacteriology, gene transfer and antibiotic resistance are organized as part of this course</p>
<p>Aims</p>	<p><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></p>
<p>Content</p>	<p>Introduction to the world of viruses and bacteria. Topics include :</p> <ul style="list-style-type: none"> - structure and organization of typical bacteria (Gram+ or Gram-) - bases of bacterial functioning (compartmentalization, transport, energy) - nature, functioning, and evolution of bacterial (and bacteriophage) genomes - DNA transfer within the bacterial cell and between bacteria - principles of antibiotics activity, and development of antibiotic resistance - structure, organization and mode of replication of viruses that infect eucaryotic cells - functioning of viruses and consequences of the infection, based on selected examples
<p>Bibliography</p>	<p>Syllabus (texte + illustrations présentées au cours), disponible sur Moodle</p> <p>Site Web d'initiation à la virologie (+ tests et quiz)</p> <p>http://www.virologie-UCLouvain.be</p> <p>Prescott, L. M., Harley, J. P. & D. A. Klein (2003). Microbiologie. Bruxelles : De Boeck</p>
<p>Faculty or entity in charge</p>	<p>FARM</p>

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Medecine	MD1BA	2	WMEDE1112 AND WMDS1109	
Bachelor in Dentistry	DENT1BA	2	WMEDE1112 AND WMDS1109 AND WMDS1105	