

Teacher(s)	Leclercq Isabelle ;Leprince Julian ;Lucas Sophie (coordinator) ;Renauld Jean-Christophe ;Van den Eynde Benoit ;
Language :	French > English-friendly
Place of the course	Bruxelles Woluwe
Prerequisites	cellular biology, bacteriology, virology, molecular biology, genetics. <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>
Main themes	Main discoveries that lead to the identification of antibodies, HLA molecules, B and T lymphocytes, and of the main interactions between immune cells, involving or not soluble agents. Description of the main components of innate immunity. Integrated view of all these components at work in infectious diseases, vaccination, autoimmune diseases, cancer, transplantation and hypersensitivity reactions.
Learning outcomes	<b>At the end of this learning unit, the student is able to :</b>  1 Understand how our immune system deals with microbes through adaptive and innate immunity. Understand the mechanisms that lead to the two main characteristics of adaptive immunity: specificity and memory. Understand the bases of vaccination, graft rejection responses, autoimmune diseases and hypersensitivity reactions such as allergy.
Evaluation methods	<ul style="list-style-type: none"> <li>• Short exercises given during the course.</li> <li>• Exercises corrected via Moodle.</li> <li>• The last course is a 'revision' class related to an upcoming exam, where the subject matter will be discussed collectively and corrected/clarified by the professors.</li> </ul> <p>The student will be assessed by a written exam, comprising only open-ended questions, often short, of which at least one will be given in English. The answers are given in French (or in English for those who wish). The pass threshold is set at 10. Non-whole marks are rounded to the whole number.</p>
Teaching methods	<p><b>Lectures:</b></p> <ul style="list-style-type: none"> <li>• With examples and illustrations, presentation of English language slides, some elements will be presented on a blackboard.</li> <li>• Co-presenter: each teacher will give part of a course</li> </ul> <p><b>Software Platform:</b></p> <ul style="list-style-type: none"> <li>• Upload of documents and slides on Moodle</li> <li>• Upload of exercises and answer sheets on Moodle</li> </ul> <p>Lectures are given in an auditorium and via podcast. Accompanied by a slide show and sometimes on the blackboard.</p>
Content	<p>This general training course focuses on the principle mechanisms involved in an immune response. It will focus on Mendelian and molecular genetics, cell biology, biochemistry, microbiology, and histology. The course will address the notions necessary to comprehend the functioning of the immune system, and describe the phenomena's involved in the normal and pathological immune response. It will lead to the comprehension of 1) the methods used by the immune defence system during normal situations and, 2) the deficiency or exacerbation mechanisms used by the immune response, during pathological situations. This course complements the students enrolled in the Biological Science programme.</p> <p>The lecture will focus on the experimental aspect of the discipline, by detailing which experiences did certain important notions were acquired.</p> <p>1. History and basic knowledge. 2. Antibodies and lymphocytes. 3. Lymphocytes. 4. Development and organisation of the immune system: natural and adaptive immunity. 5. Immune tolerance and autoimmunity. 6. Synthesis: the immune's response against infectious antigens. 7. Immunopathology elements: hypersensitivity, anti-infection defences, tumour immunology. 8. Vaccines, transplants, mucosal immunity.</p> <p>The course includes two sections, the first section is a <u>35-hour module</u> which deals with all subject matters (including Histology notions) and consists of the central core for 3rd year Bachelor students in Medicine, Dentistry, Pharmacy and Biomedical Sciences. Included in these 35 hours, is a 5-hour specialisation specifically targeted</p>

	<p>for students in Dentistry, and during this time, the other students (Medicine, Pharmacy and Biomedical Sciences) will review other immunology notions (tolerance, autoimmunity, cancer, transplants, ...).</p> <p>The second section is a <u>30-hour module</u> which is given simultaneously to the <u>Bachelors in Biomedical Sciences</u>, and which allows to dig deeper into the subject matter, by insisting on practical and experimental applications.</p> <p><b>The course slides are in English and the final written exam will always consist of one question, written in the English language</b>, but the answer can be provided in French.</p>
Faculty or entity in charge	SBIM

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Biomedicine	SBIM1BA	6	WFARM1221S AND WSBIM1226 AND WSBIM1227 AND WMDS1230 AND WFARM1282	