

3.00 credits

22.5 h + 7.5 h

Q1

Teacher(s)	Hermans Emmanuel ;
Language :	French
Place of the course	Bruxelles Woluwe
Main themes	Pharmacodynamics : theoretical aspects and experimental approaches. Comprehensive overview of pharmacological targets (receptors, ionic channels, enzymes). Qualitative and quantitative characterisation of the interaction of drugs with these targets and description of the impact on physiology and opportunities for therapy. This course is documented with several examples of common drugs used in human medicine. Basic concepts in pharmacotherapy : main principles governing the study of drug action and uses as well as the risks related to pharmacological treatments.
Learning outcomes	At the end of this learning unit, the student is able to : By the end of this course, the students will possess a general knowledge of fundamental concepts in pharmacodynamics and pharmacotherapy : 1. Students will have an overview of the principal molecular targets of drugs, and will understand the methods used to evaluate the activity of drugs. 2. They will understand the fundamental aspects of the interactions between drugs and their targets 3. They will have an overview of the general rules concerning the use of drugs in human medicine. The aim of the course is to provide sufficient background for further study of all classes of drugs used in pharmacology (courses in Special Pharmacology and Pharmacotherapy)
Evaluation methods	The assessment consists of a written exam. Written exam that may include multiple-choice questions with reasoning and/or open-ended questions. The student will have to demonstrate the mastery of his knowledge and the understanding of the concepts and the evaluation is not limited to a restitution. The evaluation will thus relate in part to an interpretation of the results of pharmacodynamic experiments. During the first presentation of the exam, the mark relating to the practical work is integrated into the mark of the exam in order to constitute 10% of the overall mark. Any overall average below 10/20 is rounded down.
Teaching methods	Lecture in audience including the teaching of theoretical notions, as well as the explanation of the analysis of the results of pharmacodynamic experiments. Concrete examples from the scientific literature are used to illustrate these analyses. Mandatory practical laboratory work.
Content	General Pharmacology : mechanisms of action of drugs; quantitative study of drug-receptor interaction and related responses (potency and efficacy of drugs). Basic concepts of identification, classification and regulation of pharmacological targets. General Pharmacotherapy: therapeutic index; tolerance and pharmacodependence; secondary and unwanted effects of drugs; drug interactions; clinical evaluation of drugs: placebo effect, clinical studies. General description of pharmacological targets at the molecular level and their implication in diverse physiopathological processes. The course explores a large number of concepts specific to pharmacology. Beyond a theoretical description, several examples of drugs and their actions are explained.
Bibliography	Le support : l'essentiel des documents présentés aux cours sont accessibles sur Internet via la plateforme Moodle accessible aux membres de la communauté universitaire.
Other infos	Participation in practical work is compulsory and essential to validate the teaching unit. Any unjustified absence may result in a penalty for the examination of the teaching unit which may go as far as the cancellation of the examination mark for the year of study considered (0/20). In the event of absence, the teacher may propose to the jury to oppose registration for the examination relating to the teaching unit in accordance with article 72 of the RGEE.
Faculty or entity in charge	FARM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biomedical Engineering	GBIO2M	2		