wfarm2118

2019

UCLouvain

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

3 credits	30.0 h	Q2

Teacher(s)	Frédérick Raphaël ;Lambert Didier ;Muccioli Giulio (coordinator) ;
Language :	French
Place of the course	Bruxelles Woluwe
Main themes	The purpose of this medicinal chemistry course is to enable the student to understand, via selected examples, the different strategies used in medicinal chemistry to discover and optimize a drug. We will cover topics ranging from the choice of the therapeutic target of interest to the marketed molecule, via the discovery of potentially interesting molecules (a.k.a. 'hits') and their optimization into 'leads'. It will also discuss aspects of the interaction between molecules and targets to emphasize their importance in the action of drugs, as well as the strategies of the medicinal chemist to modulate the passage of the blood-brain barrier.
Aims	1

	- Give to the student the appropriate knowledge:
	
	  1. on the key steps leading to the discovery and development of a drug
	  2. on how to integrate the specific knowledge in chemistry, pharmaceutical chemistry, pharmacology, and toxicology into the process of discovery, evaluation and development of new drugs
	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'.
	
	   - Give to the student the appropriate knowledge:
	
	  1. on the key steps leading to the discovery and development of a drug
	  2. on how to integrate the specific knowledge in chemistry, pharmaceutical chemistry, pharmacology, and toxicology into the process of discovery, evaluation and development of new drugs
	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'.
	
	- - - -
	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".

Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Evaluation by a written exam
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Courses will be given by experts in the field, including from the pharma industry
Content	This course addresses important concepts in the context of "drug discovery" for pharmaceutical sciences undergraduate students. While the more specialized notions are discussed in elective courses, this course will give a glimpse of the methodologies used to develop, characterize, and improve a drug. Among the elements discussed, we can mention: 1. Target identification by the « omic » approaches 2. Orphan GPCRs as drug targets 3. Real world Drug Discovery 4. Medicinal chemistry in the academic world 5. Structure-based and fragment-based drug design 6. Lead-like properties 7. BBB crossing by drugs: from evaluation to optimization and prodrug strategies 8. From in-vitro to in-vivo and to the patient 9. Medicinal chemistry in the Pharma industry 10. Big size drugs

Inline resources	An adapted version of the material presented during the lessons is available on the "moodle" platform.
Faculty or entity in charge	FARM

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Pharmacy	FARM2M	3		🔍