

**Special Courses of Doctor of Philosophy Degree in Pharmaceutical
Sciences**
Pharmacology and Toxicology Department

1- Specialized Courses: (18 cr. h)

First Semester (9 cr. h)

No.	Course code	Courses	Credit hours	
			L	P
1	0602801	Advanced Pharmacotherapeutics II	3	--
2	0602802	Seminar I	3	--
3		Elective Course	3	--
Total			9	

Second Semester (9 cr. h)

No.	Course code	Courses	Credit hours	
			L	P
4	0602803	Natural and Chemical Toxins	3	--
5	0602804	Seminar II	3	--
6		Elective Course	3	--
Total			9	

Elective Courses

No.	Course code	Courses	Credit hours	
			L	P
1	0608802	Biomarkers of Diseases	3	--
2	0602805	Selected Topics in Pathology	3	--
3	0602806	Selected Topics in Histology	3	--
4	0609801	Advanced Pharmacokinetics Modeling and Simulation	3	--

**Course Description of Doctor of Philosophy Degree in
Pharmaceutical Sciences
Pharmacology and Toxicology Department**

First Semester (9 cr. h)

Course Name	Credit hours		Code No.
	L	P	
Advanced Pharmacotherapeutics I I	3	--	0602801
<p>Description: This course will discuss the epidemiology, etiology, pathophysiology, signs, symptoms and the interpretation of the clinical biochemical data leading to the diagnosis of Endocrine, musculoskeletal, psychiatric and neurological disorders, correlate it with pharmaco-therapeutics, prescribing and utilizing structured evidence-based medicine in providing appropriate treatment guidelines, formulate pharmaceutical care plans and monitor patients on drug therapies. International Medical University, Malaysia <ul style="list-style-type: none"> • https://studymalaysia.com/what/course/imu/0006208 </p>			

Second Semester (9 cr. h)

Course Name	Credit hours		Credit hours
	L	P	
Natural and Chemical Toxins	3	--	0602803
<p>Description: The course Provides an overview of common naturally occurring plant, marine and animal toxins, together with incidences of exposures to toxins and/or contaminated foodstuffs. This study unit also focuses on the effect and significance of chemical non-pharmaceutical toxins and their impacts on health hazards. (Benchmark: Department of Environmental Health & Safety, University of Florida) http://www.ehs.ufl.edu/programs/bio/toxins/ Benchmark: Department Environmental Chemistry, Switzerland http://www.eawag.ch/en/departement/uchem/projects/natural-toxins/ </p>			

Elective Courses

Course Name	Credit hours		Code No.
	L	P	
Selected Topics in Pathology	3	--	0602805
<p>Description: This course is designed to give students a basic knowledge of pathology and the nature of disease, cell injury, cell death and cell aging, acute and chronic inflammation, tissue repair, hypersensitivity reactions, and neoplasia, in addition to hemodynamic disorders, genetic disorders, diseases of immunity, and diseases of major organ systems (heart, lung, gastrointestinal tract, liver, and kidney). This will enable students to gain a greater understanding of underlying disease processes. (Bench Mark: University of Bradford -UK)</p> <ul style="list-style-type: none">• https://www.postgraduatesearch.com/university-of-bradford/57141214/postgraduate-course.htm			

Course Name	Credit hours		Code No.
	L	P	
Selected Topics in Histology	3	--	0602806
<p>Description: This course presents an overview of the microscopical features of human body tissues and organs with a particular emphasis on the heart, lung, liver, kidney, and brain. Handling of histological samples, fixation, processing, sectioning, differential stains and immunostaining techniques used for visualization of different cell types and cellular components as well as molecular pathology techniques such as in situ hybridization (ISH) staining protocols and analysis of digital images are discussed. (Bench Mark: University of Manshester -UK)</p> <ul style="list-style-type: none">• https://www.bmh.manchester.ac.uk/research/facilities/histology/			