

قائمة مقررات درجة دكتوراه الفلسفة في العلوم الصيدلانية  
قسم الكيمياء الصيدلانية

1- Specialized : (18 cr. h)

١. مقررات تخصصية:

Courses

First Semester (9 cr. h)

No.	Course code	Courses	Credit hours	
			L	P
1	0605801	Selected Topics in Advanced Pharmaceutical Organic Chemistry موضوعات مختارة في الكيمياء الصيدلانية العضوية المتقدمة	3	--
2	0605802	Seminar I بحث القائي I	3	--
3		Elective Course مقرر اختياري	3	--
<b>Total</b>			<b>9</b>	

Second Semester

No.	Course code	Courses	Credit hours	
			L	P
4	0605803	Selected Topics in Advanced Medicinal Chemistry and Drug Analysis موضوعات مختارة في الكيمياء الطبية المتقدمة و التحليل الدوائي	3	--
5	0605804	Seminar II بحث القائي II	3	--
6		Elective Course مقرر اختياري	3	--
<b>Total</b>			<b>9</b>	

### Elective Courses

No.	Course code	Courses	Credit hours	
			L	P
1	0605805	Metabolic Pathways and Prodrug Approaches of Drugs of Abuse. مسارات الأيض و مقاربة العقاقير الأولية للأدوية المساء استخدامها.	3	--
2	0605806	Applications of Advanced Spectroscopic Methods in Pharmaceutical Chemistry Research تطبيقات الطرق الطيفية المتقدمة في أبحاث الكيمياء الصيدلانية	3	--
3	0605807	Structure-Based Degradation and Stabilization of Compounds of Pharmaceutical Interest التحلل المبني على التركيب البنائي و تثبيت المركبات ذات الاهتمام الصيدلي	3	--
4	0607804	Advanced Separation الفصل المتقدم	3	--

وصف مقررات درجة دكتوراه الفلسفة في العلوم الصيدلانية  
قسم الكيمياء الصيدلانية

**First Semester (9 cr. h)**

Course Name	Credit hours		Code No.
	L	P	
<b>Selected Topics in Advanced Pharmaceutical Organic Chemistry</b> موضوعات مختارة في الكيمياء الصيدلانية العضوية المتقدمة	3	--	0605801
<b>Description:</b> The course delivers deep knowledge of advanced pharmaceutical organic chemistry topics including advanced stereochemistry of certain reactions with special emphasis on stereospecific, stereoselective and regioselective reactions. Focus is also done on heterocycles and fused heterocycles containing one or more hetero-atoms regarding their synthesis, chemical reactions and the synthesis of representative drugs derived from them. In addition, highlights on recent topics in organic chemistry will be included as introducing new organic reagents for functional group reactions and click chemistry. Ohio State Univ. <ul style="list-style-type: none"> <li><a href="http://pharmacy.osu.edu/future-students/graduate-studies_program">http://pharmacy.osu.edu/future-students/graduate-studies_program</a></li> </ul>			

Course Name	Credit hours		Code No.
	L	P	
<b>Seminar I</b> بحث إلقاءي I	3	--	0604802
<b>Description:</b> The doctoral candidate searches for new topics in the field of pharmaceutical chemistry in areas related to the topics discussed in the selected topics in advanced pharmaceutical organic chemistry course. The candidate should know how access relevant full articles related to the seminar topic, apprehend them, prepare a referenced scientific report, and finally present the information compiled in a clear and comprehensive way for an audience of the teaching staff in the department and answer their inquiries.			

## Second Semester (9 cr. h)

Course Name	Credit hours		Code No.
	L	P	
<b>Selected Topics in Advanced Medicinal Chemistry and Drug Analysis</b> موضوعات مختارة في الكيمياء الطبية المتقدمة والتحليل الدوائي	3	--	0605803
<b>Description:</b> The course covers important topics in medicinal chemistry including cell cycle regulators as therapeutic targets, advances in steroid drugs and the use of artificial neural networks in drug design and discovery. Also, drug analysis topics will be covered including quantification of drugs in various dosage forms and in biological systems, enantioselective quantification of some selected drugs and impurity profiling of drug substances. Ohio State Univ. • <a href="http://pharmacy.osu.edu/future-students/graduate-studies_program">http://pharmacy.osu.edu/future-students/graduate-studies_program</a>			

Course Name	Credit hours		Code No.
	L	P	
<b>Seminar II</b> بحث إلقائي II	3	--	0605804
<b>Description:</b> The doctoral candidate searches for new topics in the field of pharmaceutical chemistry in areas related to the topics discussed in the selected topics in advanced medicinal chemistry and drug analysis course. The candidate should know how access relevant full articles related to the seminar topic, apprehend them, prepare a referenced scientific report, and finally present the information compiled in a clear and comprehensive way for an audience of the teaching staff in the department and answer their inquiries			

## Elective Courses

Course Name	Credit hours		Code No.
	L	P	
<b>Metabolic Pathways and Prodrug Approaches of Drugs of Abuse.</b> <b>مسارات الأيض ومقاربة العقاقير الأولية للأدوية المساء استخدامها</b>	3	--	0605805
<b>Description:</b> The course provides the doctoral candidate with the knowledge of the basic concepts and different classes of drugs of abuse and/or misuse, with special emphasis on the molecular mechanisms of action, toxic side effects, and metabolic pathways. Rehabilitation and treatment protocols of drug addicts are also addressed. Also, this course provides an insight on drugs abused in sports doping (like designer drugs, bath salts...etc). Moreover, discussion of different analytical techniques for detection and analysis of abused drugs is included, with the emphasis on new sensitive techniques. In addition, this course covers different classes of prodrugs, with a special focus on prodrugs design. Kyushu Univ.- Japan. <a href="http://www.phar.kyushu-u.ac.jp/eng">http://www.phar.kyushu-u.ac.jp/eng</a>			

Course Name	Credit hours		Code No.
	L	P	
<b>Applications of Advanced Spectroscopic Methods in Pharmaceutical Chemistry Research</b> <b>تطبيقات الطرق الطيفية المتقدمة في أبحاث الكيمياء الصيدلانية</b>	3	--	0605806
<b>Description:</b> The course provides basic theories for mass spectrometry, infrared spectroscopy and nuclear magnetic resonance and their applications in structure determination. Emphasis on 2D NMR techniques (NOESY, COSY, HMBC, HMQC..etc) and learning the practical use of these techniques in studying the synthesis of medicinally active compounds. University of Alberta, Canada. <a href="https://calendar.ualberta.ca/content.php">https://calendar.ualberta.ca/content.php</a>			

Course Name	Credit hours		Code No.
	L	P	
<b>Structure-Based Degradation and Stabilization of Compounds of Pharmaceutical Interest</b> <b>التحليل المبني على التركيب البنائي وتثبيت المركبات ذات الاهتمام الصيدلي</b>	3	--	0605807
<b>Description:</b> The course covers the chemical basis of stability and instability of certain functional groups within organic molecules against hydrolytic, thermal, alkaline, acidic, oxidative and photodegradation. Mechanisms of organic reactions involved in the degradation and stabilization of drugs and compounds of pharmaceutical interest are studied. Ohio State Univ. <a href="http://pharmacy.osu.edu/future-students/graduate-studies_program">http://pharmacy.osu.edu/future-students/graduate-studies_program</a>			

