Special Courses of Master Degree in Pharmaceutical Sciences

Pharmaceutical Chemistry Department

1-General Courses :(0600700) (12 cr. h)
2- Specialized Courses: (12 cr. h)

First Semester (6 cr. h)

No.	Course code	Courses	Credit hours	
			L	P
1	0605701	Advanced Pharmaceutical Organic Chemistry	3	--
2		Elective Course	3	
Total			**6**	

Second Semester (6 cr. h)

No.	Course code	Courses	Credit hours	
			L	P
3	0605702	Advanced Medicinal Chemistry	3	--
4	0605703	Drug Design	3	--
Total			**6**	

Elective Courses

No.	Course code	Courses	Credit hours	
			L	P
1	0605704	Drug Synthesis	3	-
2	0605705	Drug Analysis	3	-
3	0602703	Applied Experimental Pharmacology	2	1*

*1 credit hour practical is 2 hours session weekly

Course Description of Master Degree in Pharmaceutical Sciences

Pharmaceutical Chemistry Department

First Semester (6 cr. h)

Course Name	Credit hours		Code No.
	L	P	
Advanced Pharmaceutical Organic Chemistry	3	--	0605701

Description: This course provides basic knowledge about heterocyclic chemistry regarding; nomenclature, synthesis and reactivity of heteroaromatic compounds, applications of heterocyclic compounds. In addition, it deals with name reactions, pericylic reactions, investigation of organic reaction mechanism, acidity and basicity concepts of organic compounds, protecting groups, hybridization and ring strains

- **Ohio State Univ. http://pharmacy.osu.edu/future-students/graduate-studies program**

Second Semester (6 cr. h)

Course Name	Credit hours		Code No.
	L	P	
Advanced Medicinal Chemistry	3	--	0605702

Description: The course delivers advanced study of selected classes of medicinal compounds with particular emphasis on biological activity, mechanism of action, biotransformation and structural and physical properties governing their fate in the biological system

- **Ohio State Univ. http://pharmacy.osu.edu/future-students/graduate-studies program.**

Course Name	Credit hours		Code No.
	L	P	
Drug Design	3	--	0605703

Description: This course addresses the application of modern in silico tools and recent techniques in different phases of drug discovery and design of new drug candidates. The following concepts of drug design are discussed: molecular modeling, computer-aided drug design (CADD), structure-based drug design, ligand-based drug design, pharmacophore searching, molecular docking, quantitative structure activity relationship (QSAR), fragment-based lead discovery, drug-likeness metrics, pharmacokinetic and pharmacodynamic lead optimization strategies.

- **Ohio State Univ. http://pharmacy.osu.edu/future-students/graduate-studies program**

Elective Courses

Course Name	Credit hours		Code No.
	L	P	
Drug Synthesis	3	--	0605704
Description: This course deals with reactions and synthesis in medicinal chemistry. It covers the following topics: reagents in organic synthesis, synthesis of intermediates applicable in drug synthesis, synthesis of representative drugs, peptide synthesis, retro synthesis, rearrangements, techniques in pharmaceutical organic synthesis (e.g. purification and separation techniques). The course highlights some information about recent topics in pharmaceutical chemistry (e.g. solid-phase supported reagents). The course also includes stories from the medicinal industry and scalability problems, environmental considerations pertaining to the proposed synthetic procedures and green chemistry concepts. • **Ohio State Univ. http://pharmacy.osu.edu/future-students/graduate-studies program**			

Course Name	Credit hours		Code No.
	L	P	
Drug Analysis	3	--	0605705
Description: This course illustrates the following topics: functional group-based analysis, chemical quality control of drugs, and impurity profiling of pharmaceutical compounds • **Ohio State Univ. http://pharmacy.osu.edu/future-students/graduate-studies program**			