

Academic Master's Degree: Pharmaceutical Process Engineering

1st year

Fall Semester

Course	Credits	Coefficient	weekly time load			Time load/semester (15 weeks)	Additional Work in Consultation (15 weeks)	Evaluation mode	
			Lectures	DW	PW			continuous assessment	Final Exam
Pharmaceutical Chemistry I: Structure and Design	4	2	1h30	1h30		45h00	55h00	40%	60%
General Pharmacology	2	1	1h30			22h30	27h30	40%	60%
Pharmacognosy	2	1	1h30			22h30	27h30	40%	60%
Fluid-Fluid Unit Operations (extraction, distillation, absorption, and stripping)	6	3	3h00	1h30		67h30	82h30	40%	60%
Heat Transfer and Heat Exchangers	4	2	1h30	1h30		45h00	55h00	40%	60%
Lab Work for Pharmaceutical Chemistry, Galenic Forms, and Pharmacognosy	3	2			2h30	37h30	37h30	100%	
Lab Work for Fluid-Fluid Unit Operations	2	1			1h30	22h30	27h30	100%	
Lab Work for Heat Transfer and Heat Exchangers	2	1			1h30	22h30	27h30	100%	
Galenic Forms	2	1	1h30			22h30	27h30	40%	60%
Elective Subject	1	1	1h30			22h30	2h30	40%	60%
Elective Subject	1	1	1h30			22h30	2h30	40%	
Technical English and Terminology.	1	1	1h30			22h30	2h30	40%	60%
Total	30	17	15h00	4h30	5h30	375h00	375h00		

Spring Semester

Course	Credits	Coefficient	weekly time load			Time load/semester (15 weeks)	Additional Work in Consultation (15 weeks)	Evaluation mode	
			Lectures	DW	PW			continuous assessment	Exam
Industrial Production of Solid Dosage Forms	4	2	3h00			45h00	55h00	40%	60%
Pharmaceutical Chemistry II: Therapeutic Classes	2	1	1h30			22h30	27h30	40%	60%
Analysis and Control of Medicines	4	2	1h30	1h30		45h00	55h00	40%	60%
Fluid-Solid Unit Operations	4	2	1h30	1h30		45h00	55h00	40%	60%
Multiphase Reactors	4	2	1h30	1h30		45h00	55h00	40%	60%
Lab Work for Fluid-Solid Unit Operations and Multiphase Reactors	2	1			1h30	22h30	27h30	100%	
Lab Work for Industrial Production of Solid Dosage Forms	2	1			1h30	22h30	27h30	100%	
Lab Work for Analysis and Control of Medicines	2	1			1h30	22h30	27h30	100%	
Process Engineering Simulators	3	2	1h30		1h00	37h30	37h30	40%	100%
Elective Subject	1	1	1h30			22h30	2h30		100%
Elective Subject	1	1	1h30			22h30	2h30		100%
Ethics, Professional Conduct, and Intellectual Property.	1	1	1h30			22h30	2h30		100%
Total	30	17	15h00	4h30	5h30	375h00	375h00		

2nd yearFall Semester

Course	Credits	Coefficient	weekly time load			Time load/semester (15 weeks)	Additional Work in Consultation (15 weeks)	Evaluation mode	
			Lectures	DW	PW			continuous assessment	Exam
Production of Liquid and Semi-solid Dosage Forms	4	2	1h30	1h30		45h00	55h00	40%	60%
Biopharmaceutics and Pharmacokinetics	4	2	3h00			45h00	55h00	40%	60%
Sterilization and Lyophilization	2	1	1h30			22h30	27h30	40%	60%
Bioreactors	4	2	1h30	1h30		45h00	55h00	40%	60%
Production of Water for Pharmaceutical Industries	4	2	1h30	1h30		45h00	55h00	40%	60%
Basics of Process Control and Regulation	2	1	1h30			22h30	27h30	100%	
Experimental Designs	3	2	1h30		1h00	37h30	37h30	40%	60%
Process Optimization and Modeling	4	2	1h30	1h30		45h00	55h00	40%	60%
Elective Subject	1	1	1h30			22h30	27h30	40%	60%
Elective Subject	1	1	1h30			22h30	27h30	40%	60%
Research Documentation and Thesis	1	1	1h30			22h30	2h30		100%
Total	30	17	18h00	6h00	1h00	375h00	375h00		

Spring Semester of the 2nd year is dedicated to thesis and dissertation