Master in Branch Process Engineering

Speciality Pharmaceutical Engineering

Brief

The master's degree in Pharmaceutical Engineering is an academic type of graduation training. As such, it is carried out under the direct supervision of the technology department. This master has as essential support the Laboratory of Valorization of natural substances (VSN).The master's degree in pharmaceutical engineering is designed as a set of educational units whose purpose is to give the students concerned a solid training in thepharmaceutical chemistry and the Industrial production of drugs and it analysis and control. This master is in a profile of educational and industrial, intended to train executives of high scientific level, capable of investing in research and innovation.

Field	Branch	Speciality
Sciences and Technologies	**Process Engineering**	**Pharmaceutical Engineering**

First Semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	Volume (hour)
Fundamental Unit	Pharmaceutical Chemistry I: Structure and Design	4	2	1h30	1h30		45h00
	General pharmacology	2	1	1h30			22h30
	Pharmacognosy	2	1	1h30			22h30
	Unit Operations : Fluid-Fluid	6	3	3h00	1h30		67h30
	Heat Transfer and Heat Exchangers	4	2	1h30	1h30		45h00
Methodological unit	TP Pharmaceutical Chemistry	3	2			2h30	37h30
	TP Unit Operations : Fluid-Fluid	2	1			1h30	22h30
	TP Heat Transfer and Heat Exchangers	2	1			1h30	22h30

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	Volume (hour)
	Dosage forms	1	1	1h30			22h30
Discovery unit	Course of choice	1	1	1h30			22h30
	Course of choice	1	1	1h30			22h30
Transversale Unit	Technical English and terminology	1	1	1h30			22h30

Second Semester 2

Teaching unit	Matter	Credit	Coefficient	Courses	TD	Practical Work	Volume (hour)
Fundamental Unit	Industrial production of drugs	4	2	3h00			45h00
	Pharmaceutical Chemistry II	2	1	1h30			22h30
	Medication analysis and control	4	2	1h30	1h30		45h00
	Unit Operations: Fluid-Solid	4	2	1h30	1h30		45h00
	Multiphase Reactors	4	2	1h30	1h30		45h00
Methodological unit	TP: Unit Operations: Fluid-Solid	2	1			1h30	22h30
	TP : Multiphase Reactors	2	1			1h30	22h30
	TP : Medication analysis and control	2	1			1h30	22h30
	Process Engineering Simulators	3	2	1h30		1h00	37h30
Discovery unit	Course of choice	2	1			1h30	22h30
	Course of choice	3	2	1h30		1h00	37h30
Transversale Unit	Ethics, deontology and intellectual property	1	1	1h30			22h30

Third Semester

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	HV
Fundamental Unit	Production of drugs in liquid and paste forms	4	2	1h30	1h30		45h00

Teaching unit	Matter	Credit	Coefficient	C	TD	TP	HV
	Biopharmaceutics and Pharmacokinetics	4	2	31h00			45h00
	Sterilization and freeze-drying	2	1	1h300			22h30
	Bioreactors	4	2	1h30	1h30		45h00
	Water production for pharmaceutical industries	4	2	1h30	1h30		45h00
Methodological unit	Process regulation and control	2	1	1h300			22h30
	Plans of experiments	3	2	1h30		1h00	37h30
	Numerical analysis	4	2	1h30	1h30		45h00
Discovery unit	Course of choice	1	1	1h30			22h30
	Course of choice	1	1	1h30			22h30
Transversale Unit	Documentary research	1	1	1h30			22h30

Semester 4

Internship in a company sanctioned by a thesis and a defense.

	VHS	Coeff	Crédits
Personal Work	550	09	18
Internship in a company	100	04	06
Seminars	50	02	03
Other (Supervision)	50	02	03
Total Semester 4	750	17	30