



Universidad
de La Laguna



Industrial Pharmacy Education in Spain

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GENERAL OBJECTIVES:

Complete the training in Pharmaceutical Technology for Pharmaceutical Industry (Global)

Industrial Pharmacy and specialist has to be trained for:

- Research, develop and manufacture drugs at industry. Approve or reject, as appropriate, raw materials, packaging materials and intermediate products, bulk products and finished products.
- Authorize the placing on the market of each batch of drugs, certified conformity and formalized its quality guarantee.
- To promote and guarantee the necessary training to staff at your service.
- Take care of industrial hygiene, including waste management, and address the environmental conditions of the production of pharmaceutical products and proper storage.



How Industrial Pharmacy specialist have been trained?

The Past (2003-2015)

- **Specific and complementary courses (<60EC)**
- **Specific Official and No Official Masters** (National Quality Agency certified)
 - **Program**: Regulatory affairs, Quality Control, Marketing, Biopharmaceuticals, Biotechnology, Management.....
 - **Institutions**: University, Private Master Schools.
 - **Duration**: 60 EC
 - **Admission**: BSc, CV , interview (op)
 - **Registration Prices**: > 2000 €
 - **Industry training**: Variable (0-9 EC)
 - **Recognition of the Certificate**: Local or National
 - **Master Employability**: No data



How Industrial Pharmacy specialist have been trained?

The Past (2003-2015)

- **General Official and No Official Masters** (National Quality Agency certified)
 - **Programs (general each institution)**: Drug R&D, Dosage Forms Production, Drug Delivery, GMP, GLP, QC, QA, Regulatory...
 - **Institutions**: University (6 approx), Private Master Schools (3 approx).
 - **Duration**: 60-120 EC
 - **Admission**: BSc, CV , interview (op)
 - **Registration Prices**: > 2000 to 20,000 €
 - **Industry training**: Variable (0-50 EC)
 - **Recognition of the Certificate**: Local or National
 - **Master Employability**: No data



How Industrial Pharmacy specialist have been trained?

The Past (2003-2015)

- **Specialization in Industrial Pharmacy and Galenic**
 - **Program (Unique, National Health Ministry Registered)**: Drug R&D, Dosage Forms Production, Drug Delivery, Biopharmaceuticals, GMP, GLP, QC, QA, Regulatory...
 - **Institutions: University (4 certified).**
 - **Duration: 120 EC (24 months)**
 - **Admission: Only Pharmacy Graduates (44 by year) . A national examination (FIR).**
 - **Registration Prices: 8000-9000 €**
 - **Industry training: 30 EC (6 months full time, scholarship holder)**
 - **Recognition of the Title: National**
 - **Speciality Employability: **Near to 100%****

Highlights

- Specialization in Industrial Pharmacy and Galenic
 - Institutions: University (**4 certified**).
 - More than 1500 specialists in Spain



University	Students
Barcelona	15
Pamplona	9
Alcalá de Henares	10
CEU – Madrid	10
Total	44



Highlights

- Specialization in Industrial Pharmacy and Galenic

- Industry training: 30 EC (6 months full time, financial aid)

Program: Rotation

- Stocks Planning
- Maintenance.
- Production.
- Packing.
- Quality control.
- Quality assurance.
- Research and pharmaceutical development

- Students must know its operation and their interrelation of the following Departments



Highlights

- Specialization in Industrial Pharmacy and Galenic

ORIGIN OF TEACHERS	TOTAL	
Pharmaceutical Industry	171	48,7 %
Health Administration	73	27,3 %
University	96	20,8 %
Others	11	3,1 %



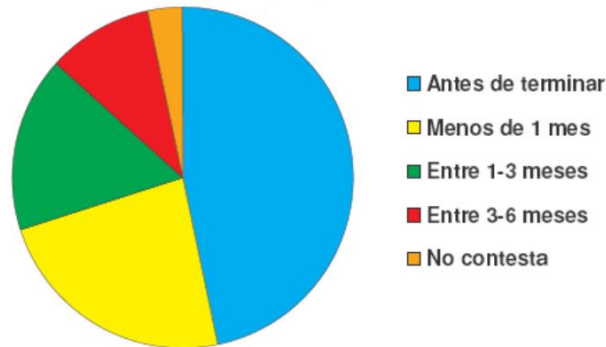
Highlights

- Specialization in Industrial Pharmacy and Galenic
 - Specialist Employability: **Near to 100%**



Cuestiones Laborales

- Cuanto tiempo para conseguir primer trabajo tras finalización de EFIG
 - Antes de terminar 14 (47%)
 - Menos de 1 mes 7 (23%)
 - Entre 1 y 3 meses 5 (17%)
 - Entre 3 y 6 meses 3 (10%)
 - No contesta 1 (3%)





How Industrial Pharmacy specialist are being trained?

The Present

General Official and No Official Masters (National Quality Agency certified)

- **Programs (general each institution)**: Drug R&D, Dosage Forms Production, Drug Delivery, GMP, GLP, QC, QA, Biopharmaceuticals, Regulatory...
- **Institutions**: University (6 aprox), Private Master Schools (3 aprox).
- **Duration**: 60-120 EC
- **Admission**: BSc, CV , interview (op)
- **Registration Prices**: > 2000 to > 20,000 €
- **Industry training**: Variable (0-50 EC) Scholarship holders
- **Recognition of the Certificate**: Local or National
- **Master Employability**: No data



How Industrial Pharmacy specialist are being trained?

The Present

Weaknesses

- Prices: > 2000 to > 20,000 €
- Industry training: Variable (0-50 EC)
- Recognition of the Certificate: Local or National
- Master Employability: No data. **Some of them are focused to facilitate graduates in Sciences access to doctoral studies**



How Industrial Pharmacy specialist will be trained?

The Future: Back to the Past?

A reform proposal to adapt the “Specialisation in Industrial Pharmacy and Galenic” to the Internal Resident Pharmacist (FIR) official education system.

The proposal come from the National Commission and is supported by Professional and Scientific Associations, Universities and local Pharmaceutical Industry



How Industrial Pharmacy specialist will be trained?

ACTIVITY	EC (PAST 120) 2 years	EC (FUTURE 180) 3 years
Theoretical Program		
Industrial Pilot Facilitie (Phaculty)	90	30
National Health System (Hospital)		30
Pharmaceutical Industry	30	120



How Industrial Pharmacy specialist will be trained?

Strengths

- Program (Unique, National Health Ministry, University, Industry Agreed)**: Drug R&D, Dosage Forms Production, Drug Delivery, Biopharmaceuticals, GMP, GLP, QC, QA, Regulatory... **Clinical Trials, Drug Adaptation**
- Duration: 180 EC (36 months)**
- Admission: Only Pharmacy Graduates (44) . A national entrance examination (FIR).**
- Registration Prices: Student contracted from the beginning**
- Industry training: 120 EC**
- Recognition of the Title: National**

The Future: Back to the Past?

	Clinical Analysis	Hospital Pharmacy	Microbiology and Parasitology	RadioPharmacy	Clinical Biochemistry	Inmunology	Industrial Pharmacy and Galenic (FIG)
ACCESS	FIR	FIR	FIR	FIR	FIR	FIR	FIR
REQUIRED QUALIFICATION PROGRAM		Pharmacist					Pharmacist
DURATION	4	4	4	2	4	4	2
STUDENTS (average)	42	124	22	4	18	1	44

Example of one of the last public offer to access the sanitary specialization in the Spanish National Health System including FIG

THANKS FOR YOUR ATTENTION