

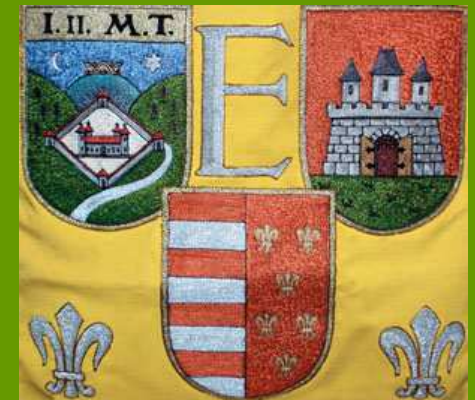


# Graduate and postgraduate education of Pharmacy professionals



Pécs

April 26, 2017.



# Role of pharmacists in the healthcare systems

Community Pharmacy

Clinical Pharmacy

Regulatory Pharmacy

Pharmaceutical care

Management of drug therapy



# Role of pharmacists in the pharmaceutical industry

Research and development

Manufacture and quality assurance

Drug information

Patent applications and drug registration

Clinical trials and post-marketing surveillance

Sales and marketing

Management



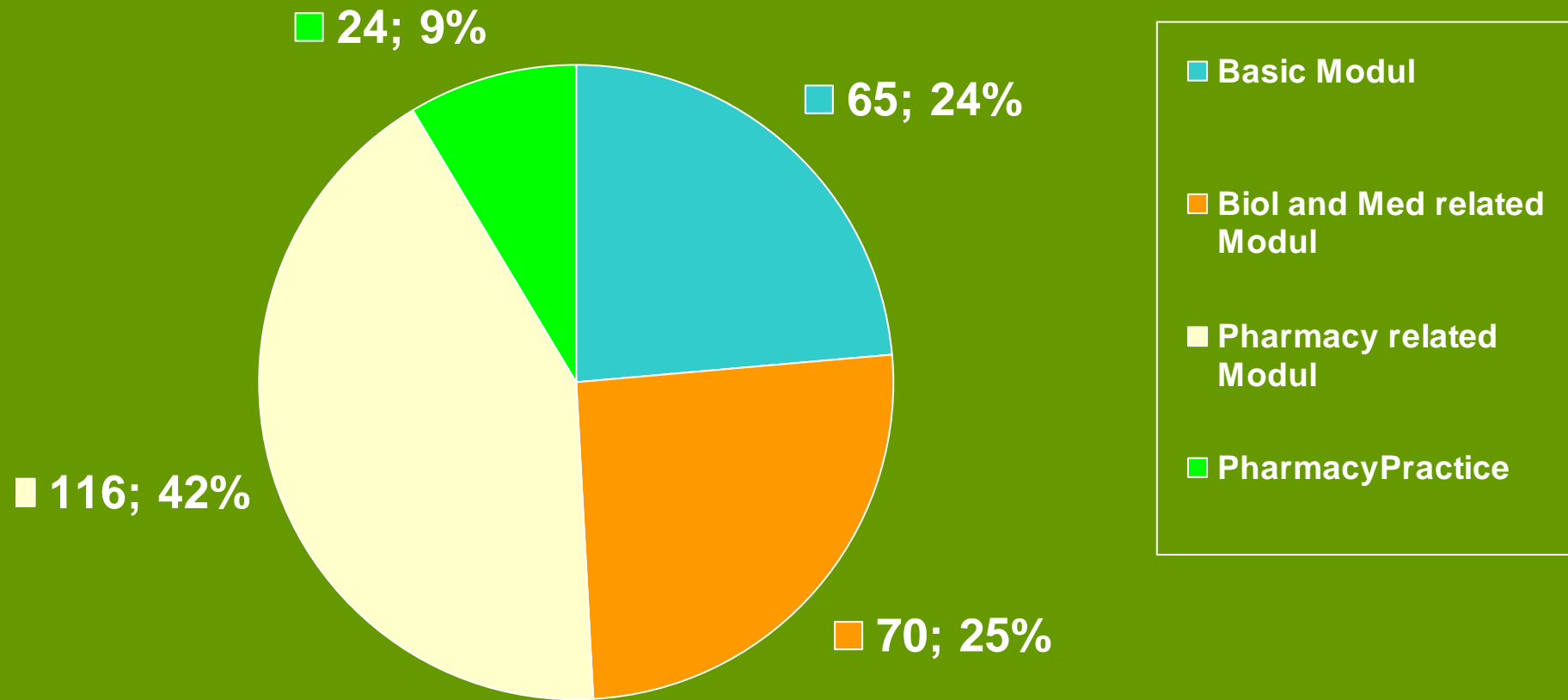
# The Pharmacy Curriculum

- The Pécs University School of Pharmacy offers educational program leading to a *Master of Pharmacy* (Pharm.D.) degree.
- The *Pharm.D.* degree enables students to obtain a license to practice pharmacy in Hungary and the European Union. To become a registered pharmacist outside the EU might require passing the country's National Board Exam.
- Completion of the 10 semester curriculum requires completion of courses of *300 credit* value, fulfill the *6 month practice* and sitting for and passing the *National Board Exam*.

# Structure of education

- According to the governmental decree of 18/2016. (VIII. 5.) the education is built of three educational moduls:
  - a.) *basic* modul: **65-90** credit
  - b.) *biologic and medicinal* modul: **50-85** credit
  - c.) *pharmacy related* modul **105-150** credit
- Students should acquire 300 credits to obtain Master of Pharmacy (Pharm.D.) degree.
- **Credits have to be collected according to the following scheme:**
  - **Compulsory subjects** **240 credits (80 %)**
  - **Diplome thesis** **10 credits (3.3 %)**
  - **Facultative subjects** **15 credits (5 %)**
  - **Elective subjects** **35 credits (11.7 %)**

## Distribution of moduls at UP (Compulsory subjects)



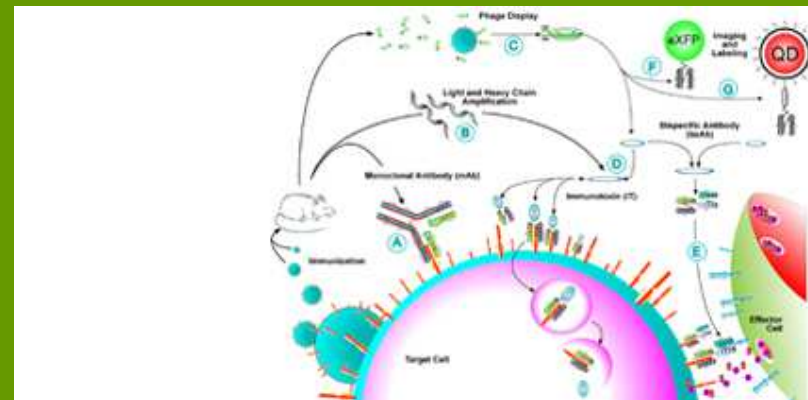
# List of Compulsory Subjects – *Basic modul* (not complete list)

- General Chemistry
- Inorganic Chemistry
- Analytical Chemistry
- Physical Chemistry
- Colloid Chemistry
- Mathematics
- Organic Chemistry
- Informatics



# List of Compulsory Subjects – *Biologic and Medicinal modul* (not complete list)

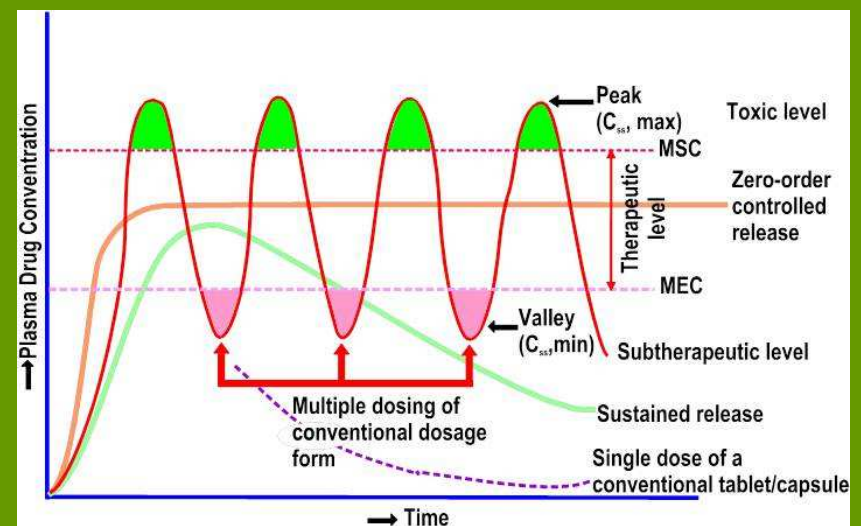
- Medical Biology
- Botany
- Anatomy
- Physiology
- Microbiology
- Pathophysiology
- Public Health





# List of Compulsory Subjects *Pharmacy-related subjects* (not complete list)

- Pharmacognosy
- Pharmaceutical Chemistry
- Pharmaceutical Technology
- Biopharmacy
- Pharmaceutical Biotechnology
- Pharmacology
- Toxicology
- Pharmacy Practice



# Faculties involved in Pharmacy education

- **Faculty of Medicine**
  - School of General Medicine
  
- **Faculty of Science**
  - School of Chemistry



# Departments involved in Pharmacy education (not complete list)

- Faculty of Science

- Department of Physical Chemistry
- Department of Analytical Chemistry



- Faculty of Medicine, School of General Medicine

- Department of Biophysics
- Department of Anatomy
- Department of Microbiology
- Department of Physiology
- Department Pathophysiology





## Departments involved in Pharmacy education - Faculty of Pharmacy

- Department of Pharmacognosy
- Department of Pharmaceutical Biology
- Department of Pharmaceutical Technology and Biopharmacy
- Department of Pharmaceutical Chemistry
- Department of Pharmacy Practice
- Department of Pharmacology
- Department of Pharmaceutical Biotechnology



# Departments of Faculty of Pharmacy



# Educational activities – Faculty of Pharmacy

- Gradual pharmacy education
- TDK (Students' Research)
- Continuing pharmacy education (Postgraduate education)
- PhD School
- Postgraduate specialization



## The legislation of postgraduate specialization in pharmacy

- The postgraduate specialization in pharmacy exists in Hungary since 1972. The legislation has changed several times. The last change was in 2015.

### Relevant legislation:

*Az egészségügyi felsőfokú szakirányú szakképzési rendszerről, a Rezidens Támogatási Program ösztöndíjairól, valamint a fiatal szakorvosok támogatásáról szóló 162/2015. (VI. 30.) Korm. rendelet*

*Az egészségügyi felsőfokú szakirányú szakmai képzés részletes szabályairól szóló 16/2010. (IV. 15.) EüM rendelet*

*Az egészségügyi felsőfokú szakirányú szakképesítés megszerzéséről szóló 22/2012. (IX. 14.) EMMI rendelet*

## 3 SPECIALIZATIONS (1-3) and 20 Qualifications

### 1. Drug supply system pharmacy specialist

- Pharmacy management (36mo)
- Pharmaceutical care (36mo)
- Compounding (36mo)
- Pharmacy quality assurance (36mo)
- Phytotherapy (36mo)
- Pharmacy administration (36mo)
- Pharmacology, pharmacotherapy (48mo)

### 2. Hospital and clinical pharmacy specialist

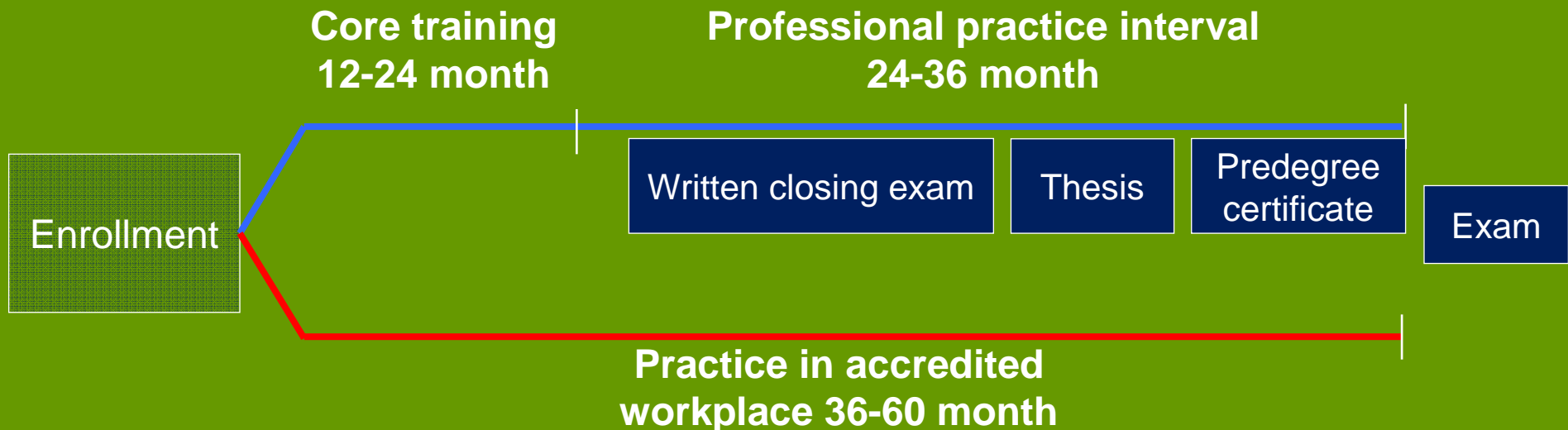
- Hospital and clinical pharmacy (36mo)
- Clinical laboratory pharmacy (58mo)
- Clinical microbiological laboratory pharmacy (60mo)

### 3. Industrial pharmacist

- Pharmaceutical technology (36mo)
- Drug analysis (36mo)
- Quality assurance (36mo)
- Non clinical and clinical drug development, pharmacology (36mo)
- Drug authorization (36mo)
- Pharmacovigilance (36mo)
- Drug research (Lead development) and pharmaceutical chemistry (36mo)
- Development and manufacturing of herbal products and pharmacognosy (36mo)
- Development and manufacturing of biological products and pharmaceutical-biotechnology (36mo)
- Radiopharmacy (36mo)



# The structure of the postgraduate specialization in pharmacy in the University of Pécs (UP)



- Theoretical part:
  - 12-24 month **core training with lectures** once a month
  - After the core training the specialist pharmacist candidates should complete an individual assignment
  - 24-36 month **professional practice interval under the supervision of Department of Pharmaceutics (University of Pécs)**
  - Written closing exam
  - Thesis
  - Absolutorium (predegree certificate)
  - Exam
- Practice: 36-60 month practice in accredited workplace (depending on the qualifications)

## Participants in the postgraduate specialization in pharmacy

- State funded training / Places financed by the government: app. 2-5 person / year (Pécs)
- Fee paying training: app. 25-30 person / year (Pécs)

2016-2017. academic year	Qualifications	Number of people
1 <sup>st</sup> year	Pharmacy management	9
	Hospital and clinical pharmacy	1
	Pharmaceutical care	1
	Pharmaceutical technology	1
	Pharmacology, pharmacotherapy	2
2 <sup>nd</sup> year	Pharmacy management	18
	Hospital and clinical pharmacy	5
	Pharmacology, pharmacotherapy	1
3 <sup>rd</sup> year	Pharmacy management	9
	Hospital and clinical pharmacy	4
	Pharmaceutical care	2
<b>TOTAL:</b>		<b>53</b>

## Postgraduate specialization in pharmacy: graduated specialist pharmacists 2008-2016

Qualifications	Number of people	% (100 % = 132)
Pharmaceutical technology	3	2,27 %
Quality assurance	2	1,52 %
<b>Pharmacology, pharmacotherapy</b>	<b>37</b>	<b>28,03%</b>
Pharmaceutical care	6	4,55%
Phytotherapy	2	1,52%
<b>Pharmacy management</b>	<b>54</b>	<b>40,91%</b>
<b>Hospital and clinical pharmacy</b>	<b>11</b>	<b>8,33%</b>
Clinical laboratory pharmacy	1	0,76%
Radiopharmacy	1	0,76%

## Hospital / clinical specialty pharmacy "endowment", Hungary vs EU

- In 2017, approximately **400** hospital/clinical pharmacists are working at hospitals in Hungary.
- To the appointment for Chief Pharmacist Hospital and clinical pharmacy specialisation is required.
- If Hungary wants to get closer to the EU average:
  - + 150-250 more hospitals, clinical pharmacist would be required**
  - If we „would like” larger clinical pharmacist-centered hospital care (similar to the practice of UK, Scotland, Spain, Netherlands, Ireland, etc.):
    - + 400-450 more hospitals, clinical pharmacist would be required**

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## Welcome to our School of Pharmacy!



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## Events

**APR 27** [Voice of UP](#)

**JUN 30** [Graduation Ceremony for Pharmacist](#)

« 2017 April »  
Mo Tu We Th Fr Sa Su

**Thank you for your kind attention!**

