# PHARMACY ORIENTATION



**FOR** 

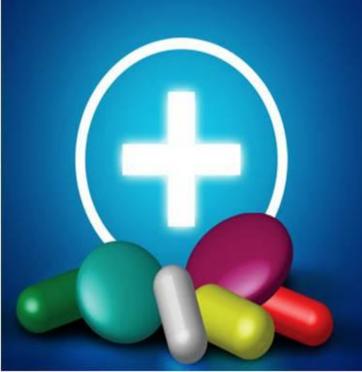
PRE-PHARMACY YEAR

Dr: Khaled sobhy

### **Course Objectives**

- Definitions and pharmacy education
- Drug and dosage form
- Pharmacy and health care
- The pharmacy Profession
- Pharmacy Careers
- Clinical pharmacy
- Pharmacy organization
- Review and Seminar assessment

# CHAPTER 1: INTRODUCTION DEFINITIONS AND PHARMACY EDUCATION



#### Introduction

- Definitions
- Pharmacy education
- Clinical pharmacist degree
  - Departments of pharmacy college
- Pharmacy education fields
- New trends in pharmacy education



# **Definitions**

Pharmacy:

The health science which deals with drug preparation and dispensing

Pharmacist (druggist):

The person who is licensed to prepare and dispense drug.

"Pharmacist is the drug expert"

# **Definitions**

#### **Prescription:**

The order of medication written by a physician, dentist or other medical practioner

#### **Drugs:**

Any chemical compound (natural or synthesized) that may be used by human or **animal** as an aid in the **diagnosis**, treatment, or prevention of disease

# **Definitions**

Clinical:

Clinical means dealing with patients

Clinical pharmacy:

Clinical pharmacy is the branch of pharmacy which provide patient care that optimizes the use of medication and promotes health, and disease prevention.

"Providing pharmaceutical care for patients".

#### **Pharmacist locations**

Community pharmacy

Hospital pharmacy



Others:

Pharmacy manufacturing Wholesale drug store

#### **Community pharmacy**

- Retail pharmacy or First line pharmacy (Independent or chain pharmacy)
- The pharmacist serves as portal of entry into the health care system.
- The community pharmacist help assist these patients to find the best health specialty or deal himself with the problem for OTC (over the counter) drugs.

#### **Hospital pharmacy**

 The practice of pharmacy in private or governmental hospital dealing with inpatients or even outpatients.

 The wide increase in hospital number make the requirement for hospital pharmacist is greater than before.

#### **Pharmacy Education**



Provide students with scientific fundamentals and support attitudes to adapt the pharmacists careers to changes in health care system



#### Pharmacy license requirement



or

-Doctor of Pharmacy degree (PharmD).



#### **Bachelor of Pharmacy**

 The degree is an undergraduate academic degree in the field of pharmacy.

 The degree is the basic prerequisite for registration to practice as a pharmacist in Egypt

In some countries or universities, Doctor of Pharmacy (PharmD) degrees is added as a separate additional year.

#### **Doctor of Pharmacy (Pharm.D.)**

 In USA, it is a first professional degree, and a prerequisite for licensing to exercise the profession of Pharmacist.

 The Doctor of Pharmacy degree is a professional degree that prepares the graduate for Clinical pharmacy practice (Clinical pharmacist).

#### **Doctor of Pharmacy (Pharm.D.)**

 In Egypt, The PharmD degree program at Helwan Uiversity is a full-time 6-year course of study

 In Tanta and Alexandria University, PharmD degree program is separated after the bachelor degree taken in two years. The first year is theoretical bases and the second year is the practical part (clinical rounds).

#### Clinical pharmacist educational requirement

- Doctor of Pharmacy (Pharm.D.)
- Master of clinical pharmacy degree after getting bachelor of pharmacy
- The Board of Pharmacy Specialties (BPS) by APhA (American Pharmacists Association):
  - **Board Certified Pharmacotherapy Specialist**
  - **Board Certified Oncology Pharmacist**
  - **Board Certified Nutrition Support Pharmacist**
  - **Board Certified Psychiatric Pharmacist**

#### **Pharmacy College Departments**



- 1- Clinical pharmacy
- 2- Microbiology
- 3- Pharmaceutical chemistry
- 4- Pharmaceutics
- 5- Analytical chemistry
- 6- Pharmacology
- 7- Biochemistry
- 8- Pharmacognosy

#### **Clinical pharmacy:**

this deals with providing patients care, drug therapeutics, Prevention of drug interactions, Drug information service, Pharmacokinetics and therapeutic drug monitoring

#### Microbiology:

Microbiology (mīkros, "small"; bios, "life"; and logia is studying. The study of microscopic organisms.

#### Pharmaceutical chemistry (Medicinal chemistry):

Medicinal chemistry is concerned with discovery, design, and chemical synthesis of drugs for market.

#### **Pharmaceutics:**

Pharmaceutics is the discipline of pharmacy that deals with the process of turning drug substance into a medication to be used safely and effectively by patients.

"the science of dosage form design"

#### **Biochemistry:**

Biochemistry or biological chemistry is the study of molecules and chemical processes within living organisms

#### **Pharmacognosy:**

Pharmacognosy is the study of drugs derived from natural sources.

#### **Analytical (inorganic) chemistry:**

The study of the separation, identification, and quantification of the chemical components of natural and artificial materials.

#### **Pharmacology:**

Pharmacology (pharmakon, "drug" and logia • "study of) is the branch of medicine concerned with the study of drug action at receptor site.

#### New trends in pharmacy education and research

#### **Pharmacogenomics:**

it is the study of the role of genetics in drug response

#### Pharmacoepidemiology:

this studies the patterns of drug effects, use and side effects in defined populations.

#### New trends in pharmacy education and research

#### **Pharmacoeconomic:**

it is study that evaluates the cost and effects of a pharmaceutical product.

#### **Molecular biology:**

The study of the molecular mechanisms by which genetic information encoded in DNA is able to result in the biological process.

#### New trends in pharmacy education and research

#### **Pharmacovigilance:**

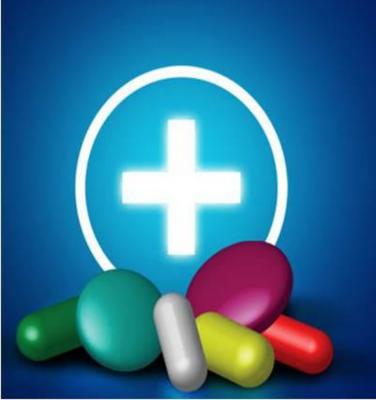
The word "pharmacovigilance" are: pharmakon (Greek for drug) and vigilare (Latin for to keep watch).

the pharmacological science relating to the detection, assessment, monitoring, and prevention of adverse effects with pharmaceutical products

#### **Pharmacy Education Fields**

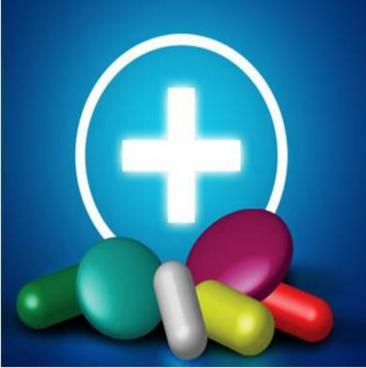
- Biomedical Science
- Pharmaceutical Science
- Behavioral, Social & Administrative
- Pharmacy practice
- Professional Experience
- Electives

#### **Biomedical Science**



- Anatomy
- Physiology
- histology
- Pathology
- Microbiology
- Biochemistry
- Organic Chemistry
- Analytical chemistry
- Botany

#### **Pharmaceutical Sciences**



- Medicinal Chemistry
- Pharmacognosy
- Pharmacology
- Toxicology
- Biopharmaceutics
- Pharmacokinetics

#### Behavioral, Social & Administrative Science



- Computer science
- terminology
- English
- Pharmacy orientation
- psychology
- Pharmacy Laws
- Biostatistics
- sociology

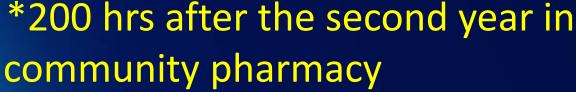
#### **Pharmacy Practice**



- Pharmaceutical Formulation
- Clinical pharmacy
- Therapeutic
- Drug interaction
- Drug information

#### **Professional Experience**

 Student training: 400 hrs training divided as following:



\*200 hrs after the third year in hospital pharmacy



#### **Electives**

- Marketing
- Pollution
- Hospital pharmacy
- Cosmetics
- Food chemistry



#### **Credit hours**

Every credit hour take 100 mark

- One hour from lecture equal to one credit hour
- Two hours from practice equal to one credit hour

 Example: "medicinal plants" takes 3 credit hour divided as lecture 2 hr and practice 2 hr.

#### **Credit hours**

Course classification:

Major courses which require 60% to pass in the exam (ex: Biology)

Minor courses which require 50% to pass in the exam (ex: English)

# Self assignment question:

 Describe in details (word report, powerpoint seminar)



- Pharmacoeconomic,
- Pharmacovigilance,
- Pharmacogenomics,
- Molecular biology,
- Pharmacoepidemiology?