

# 1st stage ; 1st Semester

# المرحلة الأولى: الفصل الدراسي الأول

## -Course title: Human Biology علم الأحياء البشري

2 hours theory and 2 hours practical per week –3 credit units

### Reference text:

### Objectives:

1. To be familiar with human body composition, types of cell structures, types of tissues, bone, skeleton, joints and muscle as well as the nutrition.

2. To be able to explain in details the different body systems and human genetics.

At the end of the course the student should be able to describe human body composition, body systems structure and function, and human genetics such as the Mendelian inheritance, division of chromosomes, and terms such as allele, locus, and homo and heterozygous.

### Human Biology

- Biology 2
- Cell 2
- Tissues, bone and cartilages 3
- Nervous system (central & peripheral) 4
- Nutrition 2
- Digestive system (Mouth, Esophagus, Stomach) 2
- Digestive system (intestine) 1
- Excretory system & respiration 3
- Human genetics (chromosomes & semi-lethal genes) 3
- Skin 2
- Circulatory system 3
- Immunity (Inflammation, immunity & the blood ,
- immunity to disease) 3

Course title: **Principles of Pharmacy Practice** مبادئ ممارسة الصيدلة

**2 hours per week – theory only – 2 credit units**

**Reference text:** Pharmaceutical Calculation by Stoklosa

**Objectives:**

Students at the end of this course should:

1. Be familiar with numbers and abbreviations commonly used in medical prescriptions, as well as different unit systems used.
2. Understand components of the typical medical prescription.
3. Be familiar with methods and tools of measuring weights and volumes, and how to calculate doses.
4. To describe values and strength in percentage and ratio

**Principles of Pharmacy Practice syllabus**

Some fundamentals of measurements and calculations. 4 hours

Interpretation of prescription or medication orders. 4

The metric system. 4

Calculation of doses. 4

Reducing and enlarging formulas. 4

Density, specific gravity and specific volume. 4

Percentage and ratio strength calculation. 6

Course title: **Analytical Chemistry** الكيمياء التحليلية

**3 hours theory and 2 hours practical per week –4 credit units**

**Reference text: Fundamentals of Analytical Chemistry by Stook and West.**

**Objectives:**

1. To provide students with a sound theoretical background in chemical principles that is essential to practice chemical analysis.
2. To enable students to understand the importance of judging the accuracy and precision of experimental data and techniques of quantitative analysis
3. To show that theory frequently serves as a useful guide to the solution of analytical problems.

**Analytical Chemistry syllabus**

- Review of elementary concept important to analytical chemistry: Strong and weak electrolytes; important weight and concentration units. 4
- The evaluation of analytical data: Definition of terms. 1
- An introduction to gravimetric analysis: Statistical analysis of data; rejection of data; precipitation methods; gravimetric factor. 9
- The scope of applications of gravimetric analysis: Inorganic precipitating agents; organic precipitating agents. 4
- An introduction to volumetric methods of analysis: Volumetric calculations; acid-base equilibria and pH calculations. 5
- Buffer solutions: Theory of neutralization titrations of simple system. 3
- Theory of neutralization titrations of complex system; Precipitation titrations. 5
- Calculation of pH in complex system; Volumetric methods based on complex system.4
- Equilibria in oxidation-reduction system; theory of oxidation-reduction titrations.6
- Spectrophotometric analysis: An introduction to optical methods of analysis; Methods based on absorption of radiation. 4
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**Course title: Mathematics and Biostatistics الرياضيات والاحصاء الحيوي**

**3 hours per week – theory only – 3 credit units**

**Reference text:**

Finny RI, Thomas GB (Eds.); Calculus and Analytical Geometry.

**Objectives:**

1. To be able to deal with the concepts of mathematics and statistics, emphasizing the knowledge and skills required to efficiently performing the duties and responsibilities of the pharmacist.
2. To be able to deal with the concepts of basic mathematics and application of biostatistics in the medical field.

**Mathematics**

General concepts; coordinate and graph in plane; inequality; absolute value or magnitude; function and their graphs; displacement function; slope and equation for lines. 6

Limits and continuity: Limits; theorem of limits; limit involving infinity; continuity; continuity conditions. 4

Derivatives: Line tangent and derivatives; differentiation rules; derivative of trigonometric function; practice exercises. 6

Integration: Indefinite integrals; rules for indefinite integrals; integration formulas for basic trigonometric function; definite integrals; properties of definite integrals; practice exercises. 6

### **(B) Biostatistics**

General concepts of statistics; statistical methods; statistical theory; applied statistics; statistical operations. 2

Probability concepts: Properties of probability; Set theory and set notation (basic notation); counting techniques- permutations and combinations; calculating the probability of an events; probability distribution of discrete variable; binomial distribution, Poisson distribution; continues probability distribution and normal distribution, review questions and exercises. 6

The concept of central tendency: Mean of sample and mean of population; median; mode; measure of central tendency; review questions and exercises. 6

Deviations and variation: Deviation; dispersion and variability; standard deviation and variance; coefficient of variations; standard error; correlation analysis.(regression model and sample regression equation); application of statistic in medical field; review questions and exercises. 9

Course title: **Medical Terminology** المصطلحات الطبية

**Reference text:** Edward CC, (Ed.); A Short Course in Medical Terminology; 1st Ed.; Lippincott, Williams and Wilkins; 2008.

**Objective:** In this course, students should learn:

1. To pronounce, spell, and define medical and pharmaceutical terms used in health care settings.
2. To use a word-building strategy that helps them discover connections and relationships among word roots, prefixes, and suffixes.
3. To learn the meaning of each part of the complex medical and pharmaceutical terms and be able to put them together and define them.

### **Medical Terminology Syllabus**

Basic word roots and common suffixes 1

More word roots, suffixes and prefixes related to pharmaceutical sciences (pharmacognosy, clinical pharmacy, pharmaceuticals, etc) 1

Basic anatomical terms and abnormal conditions 2

The genitals and urinary tract 1

- The gastrointestinal tract 1
- The heart and cardiovascular system 1
- Symptoms, diagnoses, treatments, communication qualifiers, and statistics 2
- Growth and development, and body orientation 1
- Gynecology, pregnancy, and childbirth 1
- The eye and the respiratory tract 1
- The nervous system and behavioral disorders 2
- Blood and immunity 1

**Course title: English Language اللغة الانكليزية**

**Reference: John and Liz Soars, New Headway Plus, Oxford: Oxford**

This course is designed to improve the English language for pharmacy students as a medium of instruction in the college. Learners are expected to master English more proficiently in their studies, in research and at work, both in speaking and writing. English lessons should be relevant to the practice of pharmacy e.g. history of drugs, description of drug industries, stories how drugs are discovered.

**Course title: Computer Sciences علوم الحاسوب**

**Reference: A Practical Book of Computer Applications in Pharmacy (by Gobal B. Shimpi, Rageeb Usman; NIRALI – PRAKASHAN)**

**Objectives**

This course is to highlight the role of computer technology in pharmacy practice. At its conclusion, students should be able:

1. To understand the usefulness of computer technology for patient profile storing and monitoring, and medication data-base management.
2. To perceive how computer technology can assist hospital pharmacist in keeping all relevant data in order to have an overall view of drug therapy.
3. To show how using computers can reduce time, expenditure and manpower.
4. To illustrate the usefulness of computer technology in drug information and drug poison services, monitoring of drug interactions, patient counseling and drug purchasing, and also for doing research and data presentation in the field of pharmacy
5. To understand the role of computer technology in drug design, chemical modification and discovery.

6. To show the importance of computers in web-based education, digital libraries, simulation laboratories, telepharmacy, internet (online) pharmacies, and E-learning.