



## TERMINOLOGY

**Subject:** TERMINOLOGY

**Code number:** 1701151

**Credit hours:** 1 hours

**Course designation:** First year/first semester

**Department:** Pharmaceutics and Pharmaceutical Technology

### Course syllabus:

1. Introduction.
2. Abbreviation.
3. Pharmaceutical definition.
4. The respiratory system.
5. The skeletal system.
6. Endocrine system.
7. The gastrointestinal system.
8. Cardiovascular system



## **Analytical Chemistry**

**Subject:** Analytical Chemistry

**Code number:** 1703114

**Credit hours:** 3 hours

**Course designation:** First year/second semester

**Department:** Chemical Pharmaceutical

### **Course syllabus:**

1. Introduction about pharmaceutical analysis and some analytical methods
2. Titrimetric analysis
3. Acid-base titration
4. Aqueous acid-base titration
5. Non aqueous acid-base titration
6. Complexometric titration
7. Precipitation titration
8. Oxidation – Reduction reactions
9. Determination of metals
10. Determination of drugs based on their functional groups

### **Analytical Chemistry (1) Practical**



### **Practical Laboratories:**

**Subject:** Analytical Chemistry (1) Practical

**Code number:** 1703115

**Credit hours:** 1 hours

**Course designation:** First year/second semester

**Department:** Chemical Pharmaceutical

### **Course syllabus:**

1. Preparation of analytical reagent and calibration standards
2. Standardization of NaOH and determination of KHP in an impure sample
3. Standardization of HCl and determination of total alkalinity of soda ash
4. Gravimetric determination of sulfate
5. Determination of chloride by Mohrs method
6. Determination of silver in alloy by Volhardss method
7. Differential titration of alkali using two indicators
8. Oxidation reduction titration with permanganate
9. Analysis of ascorbic acid in vitamin C tablet by titration with iodine solution
10. Analysis of copper by titration with standard solution of sodium thiosulfate
11. Determination of water hardness with EDTA
12. Analysis of aspirin tablet

## **General chemistry for pharmacy**

**Subject:** General chemistry for pharmacy



**Code number:** 1703111

**Credit hours:**3 hours

**Course designation:** First year/first semester

**Department:** Chemical Pharmaceutical

**Course syllabus:**

1. To learn chemical reaction's calculations
2. To learn properties of solutions and gases
3. To learn about the periodic table and its tunable properties
4. To learn about the different acidity and basicity media of solutions

**General chemistry lab**

**Subject:** General chemistry lab



**Code number:** 1703112

**Credit hours:** 1 hours

**Course designation:** First year/first semester

**Department:** Chemical Pharmaceutical

**Course syllabus:**

1. Includes investigation and characterization of the physical and chemical properties for many chemical compounds.
2. It involves identification of selected simple chemical compounds, such as organic halides, aromatic compounds, alcohols, ethers, aldehydes, ketones, phenols, carboxylic acids, nitro compounds and amines..etc.

**Physicochemical Principles of Pharmacy**



**Subject:** Physicochemical Principles of Pharmacy

**Code number:** 1703121

**Credit hours:** 3 hours

**Course designation:** First year/second semester

**Department:** Chemical Pharmaceutical

### **Course syllabus:**

**Intermolecular forces.** Ionic bond, coordinate bond, covalent bond, hydrogen bond and van der waal forces

**States of matter:** Gas state: definition, properties, Ideal gas law, Real gas behaviors and law. Liquid state: definition, properties, vapor pressure, boiling point. Pharmaceutical aerosols: liquefied gas aerosols and compressed gas aerosols.

Solid state: Definition and properties, arrangement of drug molecules in the solid state (amorphous form, crystalline form and polymorphism) and its effect on melting, solubility and dissolution. Studying of solid state using differential scanning calorimetry (DSC)

**Phase equilibria and phase rule.** Liquid-liquid binary mixtures, liquid-liquid ternary mixture, solid-solid binary mixtures

**Solutions of nonelectrolytes:** Properties of solutions, concentration expressions, equivalent weights, ideal solutions, real solutions, colligative properties, molecular weight determination.

Electrical conductance, equivalent conductance, colligative properties of electrolytes, Arrhenius theory of electrolytic dissociation, theory of strong electrolytes, the ionic strength, the Debye-Huckel theory, osmotic coefficient, osmolality and osmolarity.

**Isotonic solutions:** Measurement of tonicity, calculating tonicity using  $\pi$  value, methods of adjusting tonicity

**Solubility and Distribution** Solvent-Solute interaction, solubility of gases in liquids, solubility of liquids in, solubility of solids in liquids, solubility improvement, distribution of solutes between two immiscible solvents.



## **Organic Chemistry for Pharmacy**

**Subject:** Organic Chemistry for Pharmacy

**Code number:** 1703113

**Credit hours:** 3 hours

**Course designation:** First year/second semester

**Department:** Chemical Pharmaceutical

### **Course syllabus:**

Organic chemistry for pharmacy is primarily a lecture and problem-solving course which is aim to prepare the student for other courses in such as pharmaceutical organic chemistry, pharmacy; biochemistry, medicinal chemistry and phytochemistry.

The curriculum is divided in three areas of basic organic chemistry; (1) structures, properties, and nomenclatures of organic compounds, (2) mechanistic theory, and (3) synthesis and reactions. The course is composed of series of lectures, guided problem sets, and exams.