**Syllabus of Pharmacology for Nursing (1)**

**1. Course Title:** Pharmacology for Nursing (1)

**3. Credit Hours:**  (2) credits.

**4. Course Calendar:** (2) hours weekly of (15) weeks.

**5. Placement:** Third year / first semester.

**6. Instructors:** Pharmacist

**7. Course Descriptive:**

This Medical Pharmacology course is provided to medical students in the 1st and 2nd semesters in the 3rd year and it covered by 2 hours per week. Medical Pharmacology is designed to provide the most important concepts and principles related to drug management of human diseases.

Pharmacology course requires a strong sense of commitment from students and their active attendance for all aspects of the course.

Topics will include the basic principles of pharmacology and several major classes of therapeutic agents, with attention to their mechanisms of action clinical uses and their side effects.

**8. Course Goals:**

 **At the end of this course the students will be able to:**

The goal of the Medical Pharmacology course is to assure that our students obtain a thorough comprehension of the basic pharmacological principles necessary for developing effective and safe therapeutic regimens for their patients

**At the end of this course, each student should be able to:**

1- Demonstrate an understanding of the terminology used to describe basic pharmacologic principles and drug classification.

2- Describe the basic pharmacokinetic principles governing uptake, distribution, metabolism and elimination of drugs and apply these principles in the therapeutic management of patients.

3- Describe and explain pharmacodynamics concepts of drug-receptor interaction to accurately predict drug responses at all levels of biological organization.

4- Differentiate between terms such as efficacy, potency and therapeutic index as they relate to drug therapy.

5- Demonstrate an understanding of the basic mechanisms of drug-induced toxicity and drug interactions and develop appropriate approaches to their management.

6- Apply the above concepts to all major drug groups in the development of the most effective and safe therapeutic regimen for patients presenting with a variety of diseases.

7- Describe the effects exerted by drugs on cells, tissues, organ systems, and patients and be able to explain the mechanisms underlying these effects at various levels of biological organization.

**Theoretical Contents**

Unit 1: Introduction to Pharmacology: **1 Hour**

• Basic terms.

• Properties of ideal drug.

• Factors that determine the intensity of drug action.

**Unit 2: Application of Pharmacology in nursing practice: 1 Hour**

• Application of pharmacology in patient care

• Application of pharmacology in patient education

**Unit 3: Basic principles of Pharmacology: 2 Hours**

• Pharmacokinetic terms.

• Pharmacodynamics.

• Drug-drug and drug-food interactions.

• Adverse drug reactions.

• Individual variations in drug responses.

**Unit 4: Drug therapy across the life span: 2 Hours**

• Drug therapy during pregnancy and breast feeding.

• Drug therapy for pediatric patients.

• Drug therapy for Geriatric patients.

**Unit 5: Administration of Medications: 3 Hours**

• Preventing medication errors.

• Medication systems.

• Medication orders.

• Drug preparations and dosage forms.

• Routes of drug administration.

**Unit 6: Autonomic Pharmacology: 8 Hours**

• Basic principles of neuropharmacology.

• Cholinergic drugs.

• Muscarinic agonists and antagonists.

• Cholinesterase inhibitors.

• Neuromuscular blocking agents.

• Ganglionic blocking agents.

• Adrenergic agonists and antagonists.

• Indirect acting anti-adrenergic agents.

**Unit 7: Cardiovascular Pharmacology: 8 Hours**

• Drugs acting on the cardiovascular system.

• Anti-hypertensive Drugs:

• Drugs used in the treatment of angina and myocardial infarction.

• Drugs used for the treatment of heart failure (digoxin and other agents).

• Anti-arrhythmic drugs.

**Unit 8: Drugs used in the treatment of Dyslipidemia: 2 Hours**

• Role of LDL-cholesterol in atherosclerosis.

• Lipid lowering drugs.

**Unit 9: Anti-coagulant, anti-platelet and Thrombolytic Drugs: 2 Hours**

• Overview of drugs used to treat thrombi-embolic disorders.

• Parenteral anti-coagulants, Oral anti-coagulants, anti-platelet drugs.

• Thrombolytic drugs.

**Unit 10: Drugs used for Deficiency Anemia: 1 Hour**

• Iron deficiency.

• Vitamin B12 deficiency.

• Folic acid deficiency.

**Reference:**

Goodman and Gilman. The Pharmacological Basis of Therapeutics, 11th or 12th edition. New York: McGrawHill, 2006