



# SILVER OAK UNIVERSITY

Silver Oak College of Nursing

Bachelor of Science (Nursing)

Course Name: Pharmacology-II including

Fundamentals of prescribing module &

Pathology II and Genetics

Course Code: 1060323204

Semester: 4<sup>th</sup>

## Prerequisite:

Students have completed foundational courses in basic sciences such as Biology, Chemistry, Anatomy, and Physiology. Successful completion of introductory courses in Pharmacology, Pathology, and Genetics is often a prerequisite for enrolling in advanced courses in these subjects. These introductory courses provide the foundational knowledge necessary for understanding more complex concepts. Proficiency in medical terminology is important for understanding the language and terminology used in pharmacology, pathology, and genetics courses

## Objective:

1. To enable students to acquire understanding of Pharmacodynamics, Pharmacokinetics, principles of therapeutics & nursing implications
2. To enable students to acquire knowledge of pathology of various disease condition
3. Understanding of genetics, its role in causation and management of defects and diseases and to apply this knowledge in practice of nursing.

## Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
4	0	0	4	4

## SECTION A -PHARMACOLOGY-II

### Content:

Unit No.	Contents	Teaching Hours	Weightage %
1	<b>Drugs used in disorders of ear, nose, throat &amp; Eye</b> Antihistaminics Topical applications for eye (Chloromphenicol, Gentamycin eye drops), ear (Soda glycerine, boric spirit ear drops), nose and buccal cavity-chlorhexidine mouthwash Composition, action, dosage, route, indications, contraindications, drug Interactions, side effects, adverse effects, toxicity and role of nurse	4	7
2	<b>Drugs used on urinary system</b> Pharmacology of commonly used drugs Renin angiotensin system	4	7

	<p>Diuretics and antidiuretics  Drugs toxic to kidney  Urinary antiseptics  Treatment of UTI – acidifiers and alkalinizers  Composition, action, dosage, route, indications, contraindications, DrugInteractions, side effects, adverse effects toxicity and role of nurse</p>		
3	<p><b>Drugs acting on nervous system</b>  Basis &amp; applied pharmacology of commonly used drugs  Analgesics and anaesthetics  Analgesics- Non steroidal anti-inflammatory(NSAID)drugs  Antipyretics  Opioids &amp; other central analgesics  General (techniques of GA, pre anesthetic medication) &amp; local anesthetics  Gases: oxygen, nitrous, oxide, carbon-dioxide &amp; others  Hypnotics and sedatives  Skeletal muscle relaxants  Anti psychotics o Mood stabilizers  Antidepressants  Anti Anxiety Drugs  Anticonvulsants  Drugs for neurodegenerative disorders &amp; miscellaneous drugs  Stimulants, ethyl alcohol and treatment of methyl alcohol poisoning  Composition, action, dosage, route, indications, contraindications, drug Interactions, side effects, adverse effects toxicity and role of nurse</p>	10	17
4	<p><b>Drugs used for hormonal, disorders and supplementation, contraception and medical termination of pregnancy</b>  Estrogens and progesterone's  Oral contraceptives and hormone replacement therapy  Vaginal contraceptives  Drugs for infertility and medical termination of pregnancy  Uterine stimulants and relaxants  Composition, actions dosage route indications contraindications, drugs interactions, side effects, adverse, effects, adverse effects, toxicity and role of nurse</p>	5	8
5	<p><b>Drugs used for pregnant women during antenatal, labour and postnatal period</b>  Tetanus prophylaxis  Iron and Vit K1 supplementation  Oxytocin, Misoprostol  Ergometrine  Methyl prostaglandin F2-alpha  Magnesium sulphate  Calcium gluconate</p>	3	5

6	<b>Miscellaneous</b> Drugs used for deaddiction Drugs used in CPR and emergency-adrenaline, Chlorpheniramine, used for immunization & immune-suppression & nurse's responsibilities hydrocortisone, Dexamethasone IV fluids & electrolytes replacement Common poisons, drugs used for treatment of poisoning Activated charcoal Ipecac Antidotes, Anti-snake venom (ASV) Vitamins and minerals supplementation Vaccines & sera (Universal immunization program schedules) Anticancer drugs-Chemotherapeutic drugs commonly used Immuno-suppressants and Immunostimulants	10	16
7	<b>Introduction to drugs used in alternative systems of medicine:</b> Ayurveda, homeopathy, unani and siddha etc. Drugs used for common ailments	4	7
8	<b>Fundamental principles of prescribing</b> Prescriptive role of nurse practitioners: Introduction Legal and ethical issues related to prescribing Principles of prescribing Steps of prescribing Prescribing competencies	20	33

### Course Outcome:

Sr. No.	CO statement	Unit No
CO-1	Discuss the drugs used in the treatment of ENT, Eye, Urinary, Nervous system and its nurse's responsibilities	1,2,3
CO-2	Discuss the drugs used in the treatment of hormonal disorder, supplementation, contraception, MTP, and perinatal period	4,5
CO-3	Discuss the drugs used in the deaddiction, emergency, poisoning, nutrients and alternative system of medicine	6, 7
CO-4	Demonstrate the fundamental principles of prescribing medications	8

### Teaching & Learning Methodology: -

1. Lecture cum Discussion
2. Drug study/presentation
3. Observational visit

### Books Recommended

1. Joginder Singh Pathania, Rupendra Kumar Bharti, Vikas Sood; "Textbook of Pharmacology"; CBS Publisher
2. Suresh Sharma ; "Textbook of Pharmacology & Pathology & Genetics for Nurses-II" ; Jaypee Publication
3. Prithpal Singh Matreja, Davinder Kaur, Gurleen Kaur; "Textbook of Pharmacology"; Vision Publishers
4. Dr .Shobhana Mathur; "Pharmacology-I&II For BSc Nursing student"; Frontline Publication
5. Dr. Chandrashekar R. "Textbook of Pharmacology I&II"; Emmess Publication

### List of Open-Source Software/learning website:

1. <https://pharmaedu.in/pharmacology-2-books-pdf/>
2. [https://books.google.com/books/about/Fundamentals\\_of\\_Pharmacology.html?id=uhuYzQEACAAJ](https://books.google.com/books/about/Fundamentals_of_Pharmacology.html?id=uhuYzQEACAAJ)
3. <https://www.pdfdrive.com/pharmacology-for-nurses-e14729149.html>

### CO-PO-PSO Matrix

Co. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO-1	2	3	2	1	1	2	2	2	3	3	3	2
CO-2	2	3	2	1	1	2	2	2	3	3	3	2
CO-3	3	3	2	1	1	1	2	2	1	2	2	1
CO-4	2	2	1	1	2	2	2	1	1	2	1	2

### SECTION -B Pathology-II

#### Content:

Unit No.	Contents	Teaching Hours	Weightage %
1	<b>Special Pathology: Pathological changes in disease conditions of selected systems</b> <b>1. Kidneys and Urinary tract</b> Glomerulonephritis Pyelonephritis Renal calculi Cystitis Renal Cell Carcinoma Renal Failure (Acute and Chronic) <b>2. Male genital systems</b> Cryptorchidism Testicular atrophy Prostatic hyperplasia	5	50

	<p>Carcinoma penis and Prostate.</p> <p><b>3. Female genital system</b></p> <p>Carcinoma cervix Carcinoma of endometrium Uterine fibroids Vesicular mole and Choriocarcinoma Ovarian cyst and tumors</p> <p><b>4. Breast</b></p> <p>Fibrocystic changes Fibroadenoma Carcinoma of the Breast</p> <p><b>5. Central nervous system</b></p> <p>Meningitis. Encephalitis Stroke Tumors of CNS</p>		
2	<p><b>Clinical Pathology</b></p> <p>Examination of body cavity fluids: Methods of collection and examination of CSF and other body cavity fluids (sputum, wound discharge) specimen for various clinical pathology, biochemistry and microbiology tests Analysis of semen: Sperm count, motility and morphology and their importance in infertility</p> <p>Urine: Physical characteristics, Analysis, Culture and Sensitivity</p> <p>Faeces: Characteristics Stool examination: Occult blood, Ova, Parasite and Cyst, Reducing substance etc. Methods and collection of urine and faeces for various tests</p>	5	50

**Teaching & Learning Methodology: -**

1. Lecture
2. Discussion
3. Visit to clinical Lab
4. Visit to biochemistry lab

Sr. No.	CO statement	Unit No
CO-1	Explain pathological changes in disease conditions of various systems	1
CO-2	Describe the laboratory tests for examination of body cavity fluids, urine and feces	2

### CO-PO-PSO Matrix

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CO-1	2	3	3	1	1	2	2	3	3	3	3	2
CO-2	2	2	2	1	1	2	2	3	3	2	2	3

### GENETICS

Unit No.	Contents	Teaching Hours	Weightage %
1	<b>Introduction:</b> Practical application of genetics in nursing Impact of genetic condition on families Review of cellular division: mitosis and meiosis Characteristics and structure of genes Chromosomes: sex determination Chromosomal aberrations Patterns of inheritance Mendelian theory of inheritance Multiple allots and blood groups Sex linked inheritance Mechanism of inheritance Errors in transmission (mutation)	2	20
2	<b>Maternal, prenatal and genetic influences on development of defects And diseases</b> Conditions affecting the mother: genetic and infections Consanguinity atopy Prenatal nutrition and food allergies Maternal age, Maternal drug therapy Prenatal testing and diagnosis Effect of Radiation, drugs and chemicals Infertility Spontaneous abortion Neural Tube Defects and the role of folic acid in lowering the risks Down syndrome (Trisomy 21)	2	20
3	<b>Genetic testing in the neonates and children</b> Screening for Congenital abnormalities Developmental delay Dysmorphism	2	20
4	<b>Genetic conditions of adolescents and adults</b> Cancer genetics: Familial cancer Inborn errors of metabolism Blood group alleles and hematological disorder Genetic haemochromatosis Huntington's disease	2	20

	Mental illness		
5	<b>Services related to genetics</b> Genetic testing Gene therapy Genetic counseling Legal and Ethical issues Role of nurse	2	20

**Course Outcome:**

Sr. No.	CO statement	Unit No
CO-1	Explain nature, principles and perspectives of heredity along with maternal, prenatal and genetic influences on development of defects and diseases	1,2
CO-2	Apply appropriate diagnostic tests in order to detect genetic abnormalities in patients	3,4
CO-3	Describe the understanding of various services related to genetics.	5

**Teaching & Learning Methodology: -**

1. Lecture
2. Discussion
3. Visit to clinical lab
4. Explain using slide

**Books Recommended**

1. Vandana Puri, Kavita Gaur; "Textbook of Pathology and Genetics"; CBS Publishers
2. Rimpi Bansal, Davinder Kaur; "Textbook of Pathology and Genetics"; VHS Publication
3. Suresh Sharma ; "Textbook of Pharmacology & Pathology & Genetics for Nurses-II" ; Jaypee Publication
4. Prof. (Dr.) M. Kavimani ,Dr. R. Ranjani Prema; "Pathology - II and Genetics book of B.SC Nursing"; Thakur publication
5. K Swaminathan; "Pathology & Genetics For Nurses"; Jaypee Publication

**List of Open-Source Software/learning website:**

1. [https://books.google.com/books/about/Textbook\\_of\\_Pathology\\_and\\_Genetics\\_for\\_N.htm?id=2eeaDwAAQBAJ](https://books.google.com/books/about/Textbook_of_Pathology_and_Genetics_for_N.htm?id=2eeaDwAAQBAJ)
2. <https://nurseinfo.in/product/pathology-bsc-2nd-year/>

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CO-2	2	2	2	1	1	2	1	3	2	2	1	2
CO-3	2	1	2	2	2	1	2	3	1	1	2	1