

PHARMACOLOGY - II

including Fundamentals of Prescribing Module

PLACEMENT: IV SEMESTER

THEORY: 3 Credits (60 hours)

DESCRIPTION: This course is designed to enable students to acquire understanding of Pharmacodynamics, Pharmacokinetics, principles of therapeutics & nursing implications. Further it develops understanding of fundamental principles of prescribing in students.

COMPETENCIES: On completion of the course, the students will be able to

1. Explain the drugs used in the treatment of ear, nose, throat and eye disorders.
2. Explain the drugs used in the treatment of urinary system disorders.
3. Describe the drugs used in the treatment of nervous system disorders.
4. Explain the drugs used for hormonal replacement and for the pregnant women during antenatal, intra natal and postnatal period.
5. Explain the drugs used to treat emergency conditions and immune disorders.
6. Discuss the role and responsibilities of nurses towards safe administration of drugs used to treat disorders of various systems with basic understanding of pharmacology.
7. Demonstrate understanding about the drugs used in alternative system of medicine.
8. Demonstrate understanding about the fundamental principles of prescribing.

COURSE OUTLINE

T – Theory

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
I	4 (T)	Describe drugs used in disorders of ear, nose, throat and eye and nurses' responsibilities	Drugs used in disorders of ear, nose, throat & Eye <ul style="list-style-type: none"> ● Antihistamines ● Topical applications for eye (Chloramphenicol, Gentamycin eye drops), ear (Soda glycerin, 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 	<ul style="list-style-type: none"> ● Lecture cum Discussion ● Drug study/ presentation 	<ul style="list-style-type: none"> ● Short answer ● Objective type
II	4 (T)	Describe drugs acting on urinary system & nurse's responsibilities	Drugs used on urinary system <ul style="list-style-type: none"> ● Pharmacology of commonly used drugs <ul style="list-style-type: none"> ○ Renin angiotensin system ○ Diuretics and antidiuretics ○ Drugs toxic to kidney ○ Urinary antiseptics ○ Treatment of UTI – acidifiers and alkalizers ● Composition, action, dosage, route, indications, contraindications, Drug interactions, side effects, adverse effects toxicity and role of nurse 	<ul style="list-style-type: none"> ● Lecture cum Discussion ● Drug study/ presentation 	<ul style="list-style-type: none"> ● Short answer ● Objective type
III	10 (T)	Describe drugs used on nervous system & nurse's responsibilities	Drugs acting on nervous system <ul style="list-style-type: none"> ● Basis & applied pharmacology of commonly used drugs ● Analgesics and anaesthetics <ul style="list-style-type: none"> ○ Analgesics: Non-steroidal anti-inflammatory (NSAID) drugs ○ Antipyretics ○ Opioids & other central analgesics <ul style="list-style-type: none"> ✓ General (techniques of GA, pre anesthetic medication) & local anesthetics ✓ Gases: oxygen, nitrous, oxide, carbon-dioxide & others ● Hypnotics and sedatives ● Skeletal muscle relaxants ● Antipsychotics ○ Mood stabilizers 	<ul style="list-style-type: none"> ● Lecture cum Discussion ● Drug study/ presentation 	<ul style="list-style-type: none"> ● Short answer ● Objective type

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
			<ul style="list-style-type: none"> • Antidepressants • Antianxiety Drugs • Anticonvulsants • Drugs for neurodegenerative disorders & 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 		
IV	5 (T)	Describe drugs used for hormonal disorder & supplementation, contraception & medical termination of pregnancy & nurse's responsibilities	Drugs used for hormonal, disorders and supplementation, contraception and medical termination of pregnancy <ul style="list-style-type: none"> • Estrogens and progesterones <ul style="list-style-type: none"> ○ Oral contraceptives and hormone replacement therapy • Vaginal contraceptives • Drugs for infertility and medical termination of pregnancy <ul style="list-style-type: none"> ○ Uterine stimulants and relaxants • Composition, actions dosage route indications contraindications, drugs interactions, side effects, adverse effects, toxicity and role of nurse 	<ul style="list-style-type: none"> • Lecture cum Discussion • Drug study/ presentation 	<ul style="list-style-type: none"> • Short answer • Objective type
V	3 (T)	Develop understanding about important drugs used for women before, during and after labour	Drugs used for pregnant women during antenatal, labour and postnatal period <ul style="list-style-type: none"> • Tetanus prophylaxis • Iron and Vit K1 supplementation • Oxytocin, Misoprostol • Ergometrine • Methyl prostaglandin F2-alpha • Magnesium sulphate • Calcium gluconate 	<ul style="list-style-type: none"> • Lecture cum Discussion • Drug study/ presentation 	<ul style="list-style-type: none"> • Short answer • Objective type
VI	10 (T)	Describe drugs used in deaddiction, emergency, poisoning, vitamins & minerals supplementation, drugs used for immunization & immune-suppression & nurse's responsibilities	Miscellaneous <ul style="list-style-type: none"> • Drugs used for deaddiction • Drugs used in CPR and emergency-adrenaline, Chlorpheniramine, hydrocortisone, Dexamethasone • IV fluids & electrolytes replacement • Common poisons, drugs used for treatment of poisoning <ul style="list-style-type: none"> ○ Activated charcoal 	<ul style="list-style-type: none"> • Lecture cum Discussion • Drug study/ presentation 	<ul style="list-style-type: none"> • Short answer • Objective type

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
			<ul style="list-style-type: none"> ○ 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 		
VII	4 (T)	Demonstrate awareness of common drugs used in alternative system of medicine	Introduction to drugs used in alternative systems of medicine <ul style="list-style-type: none"> ● Ayurveda, Homeopathy, Unani and Siddha etc. ● Drugs used for common ailments 	<ul style="list-style-type: none"> ● Lecture cum Discussion ● Observational visit 	<ul style="list-style-type: none"> ● Short answer ● Objective type
VIII	20 (T)	Demonstrate understanding about fundamental principles of prescribing	Fundamental principles of prescribing <ul style="list-style-type: none"> ● Prescriptive role of nurse practitioners: Introduction ● Legal and ethical issues related to prescribing ● Principles of prescribing ● Steps of prescribing ● Prescribing competencies 	<ul style="list-style-type: none"> ● Completion of module on Fundamental principles of prescribing 	<ul style="list-style-type: none"> ● Short answer ● Assignments evaluation

PATHOLOGY - II AND GENETICS

PLACEMENT: IV SEMESTER

THEORY: 1 Credit (20 hours) (Includes lab hours also)

DESCRIPTION: This course is designed to enable students to acquire knowledge of pathology of various disease conditions, understanding of genetics, its role in causation and management of defects and diseases and to apply this knowledge in practice of nursing.

COMPETENCIES: On completion of the course, the students will be able to

1. Apply the knowledge of pathology in understanding the deviations from normal to abnormal pathology
2. Rationalize the various laboratory investigations in diagnosing pathological disorders
3. Demonstrate the understanding of the methods of collection of blood, body cavity fluids, urine and feces for various tests
4. Apply the knowledge of genetics in understanding the various pathological disorders
5. Appreciate the various manifestations in patients with diagnosed genetic abnormalities
6. Rationalize the specific diagnostic tests in the detection of genetic abnormalities.
7. Demonstrate the understanding of various services related to genetics.

COURSE OUTLINE

T – Theory

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
I	5 (T)	Explain pathological changes in disease conditions of various systems	<p>Special Pathology:</p> <p>Pathological changes in disease conditions of selected systems</p> <p>1. Kidneys and Urinary tract</p> <ul style="list-style-type: none"> • Glomerulonephritis • Pyelonephritis • Renal calculi • Cystitis • Renal Cell Carcinoma • Renal Failure (Acute and Chronic) <p>2. Male genital systems</p> <ul style="list-style-type: none"> • Cryptorchidism • Testicular atrophy • Prostatic hyperplasia • Carcinoma penis and Prostate. <p>3. Female genital system</p> <ul style="list-style-type: none"> • Carcinoma cervix • Carcinoma of endometrium • Uterine fibroids • Vesicular mole and Choriocarcinoma • Ovarian cyst and tumors <p>4. Breast</p> <ul style="list-style-type: none"> • Fibrocystic changes • Fibroadenoma • Carcinoma of the Breast <p>5. Central nervous system</p> <ul style="list-style-type: none"> • Meningitis. • Encephalitis • Stroke • Tumors of CNS 	<ul style="list-style-type: none"> • Lecture • Discussion • Explain using slides, X-rays and scans • Visit to pathology lab, endoscopy unit and OT 	<ul style="list-style-type: none"> • Short answer • Objective type
II	5 (T)	Describe the laboratory tests for examination of body cavity fluids, urine and faeces	<p>Clinical Pathology</p> <ul style="list-style-type: none"> • Examination of body cavity fluids: <ul style="list-style-type: none"> ○ Methods of collection and examination of CSF and other body cavity fluids (sputum, wound discharge) specimen for various clinical pathology, biochemistry and microbiology tests 	<ul style="list-style-type: none"> • Lecture • Discussion • Visit to clinical lab and biochemistry lab 	<ul style="list-style-type: none"> • Short answer • Objective type

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
			<ul style="list-style-type: none">• Analysis of semen:<ul style="list-style-type: none">○ Sperm count, motility and morphology and their importance in infertility• Urine:<ul style="list-style-type: none">○ Physical characteristics, Analysis, Culture and Sensitivity• Faeces:<ul style="list-style-type: none">○ Characteristics○ Stool examination: Occult blood, Ova, Parasite and Cyst, Reducing substance etc.○ Methods and collection of urine and faeces for various tests		

GENETICS
COURSE OUTLINE
T – Theory

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
I	2 (T)	Explain nature, principles and perspectives of heredity	Introduction: <ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • Lecture • Discussion • Explain using slides 	<ul style="list-style-type: none"> • Short answer • Objective type
II	2 (T)	Explain maternal, prenatal and genetic influences on development of defects and diseases	Maternal, prenatal and genetic influences on development of defects and diseases <ul style="list-style-type: none"> • Conditions affecting the mother: genetic and infections • Consanguinity atopy • Prenatal nutrition and food allergies • Maternal age 	<ul style="list-style-type: none"> • Lecture • Discussion • Explain using slides 	<ul style="list-style-type: none"> • Short answer • Objective type

Unit	Time (Hrs)	Learning Outcomes	Content	Teaching/ Learning Activities	Assessment Methods
			<ul style="list-style-type: none"> • 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) 		
III	2 (T)	Explain the screening methods for genetic defects and diseases in neonates and children	Genetic testing in the neonates and children <ul style="list-style-type: none"> • Screening for <ul style="list-style-type: none"> ○ Congenital abnormalities ○ Developmental delay ○ Dysmorphism 	<ul style="list-style-type: none"> • Lecture • Discussion • Explain using slides 	<ul style="list-style-type: none"> • Short answer • Objective type
IV	2 (T)	Identify genetic disorders in adolescents and adults	Genetic conditions of adolescents and adults <ul style="list-style-type: none"> • Cancer genetics: Familial cancer • Inborn errors of metabolism • Blood group alleles and hematological disorder • Genetic haemochromatosis • Huntington's disease • Mental illness 	<ul style="list-style-type: none"> • Lecture • Discussion • Explain using slides 	<ul style="list-style-type: none"> • Short answer • Objective type
V	2 (T)	Describe the role of nurse in genetic services and counselling	Services related to genetics <ul style="list-style-type: none"> • Genetic testing • Gene therapy • Genetic counseling • Legal and Ethical issues • Role of nurse 	<ul style="list-style-type: none"> • Lecture • Discussion 	<ul style="list-style-type: none"> • Short answer • Objective type