

OPJS UNIVERSITY, CHURU (RAJASTHAN)



SYLLABUS

FOR

DIPLOMA IN ONCOLOGY

*

SCHOOL OF PARA MEDICAL SCIENCE

OPJS UNIVERSITY, CHURU (RAJASTHAN)

2013-14

~*~

SYLLABUS

Duration of course – 2 year (4 Semester)

SEMESTER -I

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DO-111	ANATOMY	100+50
2.	DO-112	PHYSIOLOGY	100+50

SEMESTER -II

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DO-211	MICROBIOLOGY AND BIO-CHEMISTRY	100+50
2.	DO-212	PHARMACOLOGY	100+50

SEMESTER -III

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DO-311	INTRODUCTION TO ONCOLOGY	100+50
2.	DO-312	SITE OF CANCER	100+50

SEMESTER -IV

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DO-411	CHEMOTHERAPY	100+50
2.	DO-412	RADIOTHERAPY	100+50

Details of Syllabus

SEMESTER -I

ANATOMY

INTRODUCTION OF ANATOMY

LANGUAGE OF ANATOMY

VARIOUS OF ANATOMY

- Supine Position , prone position, lithotomy position , varies type of plan, various terms used to various region, terms to describe muscles

BONES IN SKELETON

MUSCLES

- Skeletal muscles
(striated, non striated & cardiac muscle)

SMOOTH MUSCLES

NERVOUS SYSTEM

- (central nervous system, peripheral nervous system)

SKIN AND FASCIAE

- Appendages of skin, layer's of skin

SURFACE MARKING OF VARIOUS BODY PART

VARIOUS ANATOMICAL INSISIOS

UPPER LIMB ANATOMY

- (bone , muscles, vasculature)

ANATOMY THORAX

- (heart & lung, trachea , diaphragm and respiratory muscle)

HEAD , NECK & BRAIN

- Anatomy of skull, neck muscle & Parts of brain .

ABDOMEN

- (quadrants of abdomen, stomach , liver, spleen & Intestine.)

LOWER LIMB ANATOMY

- (bone , muscles, vasculature)

TECHNIQUE & APPROCHER TO HUMEN DISSECTION

PHYSIOLOGY

RESPIRATORY SYSTEM:-

Physiology of breathing , gaseous exchange, respiration, transport of respiratory gases, Lungs volume & capacities, Pulmonary function test.

CARDIOVASCULAR SYSTEM:-

Blood pressure and physiology of heart, cardiac cycle cardiac output , ECG.

DIAGESTIVE SYSTEM:-

Digestive enzyme & gland, digestion of carbohydrate, protein & fat , vitamin

CIRCULATORY SYSTEM:-

RBC, WBC, Platelets, blood components, plasma, blood composition & content collected from various site.

ENDOCRINE SYSTEM:-

Different hormone, their site of production, mech. of action function deficiency syndrome

EXCRETORY SYSTEM:-

Excretory function by kidney, liver, formation of urine

REPRODUCTIVE SYSTEM:-

Male & female genital system , function of overy, function of testis & hormone testosterone, progesterone Estrogen hormone menstruation cycle & fertilization.

SKIN:-

Layers of skin, function of skin

CENTRAL NERVOUS SYSTEM:-

CSF, Function of Brain, special senses smell, taste, touch, hearing.

SEMESTER –II

MICROBIOLOGY AND BIO-CHEMISTRY

INTRODUCTION OF MICROBIOLOGY

- Defination , type of micro Organism , virus Bacteria , fungi

MORPHOLOGY OF BACTERIA

- Morphology of bacteria , structure and growth of bacteria , classification of bacteria, nutrition of bacteria.

STAINING OF BACTERIA

- Gram stain, I-n Stain , negative stain , Albert stain, spore stain , composition & preparation of staining, reagents and their composition .

GRAM NEGATIVE COCCI

- Gonococci & meningococcal .

GRAM POSITIVE COCCI

- Streptococci, staphylococci, Pneumococci.

GRAM BACILLI

- Salmonella, pseudomonas, shigella, klebsiella, haenophilus E-coli other gram bacilli

GRAM POSITIVE BACILLI

- Anaerobic bacilli – clostridia
- Aerobic – mycobacterium tuberculosis and mycobacterium leprae and corynebacterium diphtheria

Bio-chemistry

Defination, classification and importance metabolism in brief following:-

- Protein
- Carbohydrate
- Lipids

Estimation of :-

- Total protein
- Serum albumin

- Globulin & A.G. Ratio
- Serum Creatinine
- Blood sugar (GOD-POD)

PHARMACOLOGY

GENERAL PHARMACOLOGY –

Defination , pharmacokinetics & pharmacodynamics, Adverse drug effects.

RESPIRATORY SYSTEM DRUG –

Drugs use for cough & bronehial asthma.
Drugs used for nebulization.

DRUG ACTING ON CENTRAL NERVOUS SYSTEM –

General anaesthesia , sedative- Hypnotics, drugs.

DRUG ACTING ON KIDNEY –

Diuretics & Anti diuretics drugs

DRUGS AFFECTING BLOOD FORMATION –

anticoagulants, antithrombotic & antiplatelet drugs.

CARDIOVASCULAR DRUG –

Cardiac glycosides and drug for CHF, Antiarrhythmic drug, antianginal & anti ischemic drugs, antihypertensive drugs.

ESSENTIAL DRUG & DRUG USED IN EMERGENCY –

Cardiac glycosides and drug for CHF, Antiarrhythmic drug, antianginal & antiischemic drug, antihypertensive drugs.

- **Mode of action of drugs**
- **Route of drug administration**
- **Drug dose calculation:-** dilution, infusion rate
- **Medical gases, O₂, N₂O**
- **Bronchodilators**
- **Mucolytic agents**
- **Antihistamines**
- **Steroids**

- **Drugs affecting autonomic nervous system isotropic agents chronoscopic agents**
- **Antihypertensive**
- **Anti heart failure**
- **Analgesic , sedative**

EMERGENCY DRUGS

- Adrenaline : Mode or administration, dilution, dosage,
- , Isoprenaline
- Atropine, bicarbonate, calcium, ephedrine, xylocard,
- Ionotropes : dopamine, dobutamine, amidaron
- Aminophylline, hydrocortisone, antihistamlnics, potassium.
- Cardiovascular drugs
- Antihypertensives
- Antiarhythmics
- Beta - Blockers
- Ca - Channel blockers.
- Vasodilators - nitroglycerin & sodium nitroprusside
- Respiratory system - Bronchodilators, respiratory stimulants
Bronchiolytic agents
- Renal system - Diuretics,furosemide,mannitol

SEMESTER – III

INTRODUCTION TO ONCOLOGY

Introduction to Oncology

Lab Values
Cell Biology
Navigating the Cancer Continuum

Epidemiology, Health Promotion & Diagnostics

Health Promotion & Prevention

Patient Teaching Diagnostics

oncology emergency

Structural and Metabolic Emergencies
Pain , Fatigue, Nausea, Dyspnea,
Neutropenia, Mucositis, Neuropathies,
Constipation, Diarrhea

Site of cancer

Lung: Prostate
BreastColorectal
Lymphomas/Leukemia
Sarcoma Multiple Myeloma : Skin Cancers
: Pediatric Cancers
Gynecological Cancers
Genitourinary Cancers (e.g. bladder, kidney)
Gastrointestinal cancers (e.g. stomach, liver): Head & Neck Cancers
Endocrine Cancers (e.g. thyroid, pancreatic)
Neurological Cancer.

SEMESTER – IV

CHEMOTHERAPY

Pharmacology of chemotherapy & targeted therapies Pharmacogenomics
Pathophysiology –
GI tract i.e. N/V,
mucositis secondary to chemo

Pharmacology of Antiemetics
Pharmaceutics – Novel Dosage Forms
Pharmacokinetics & Therapeutic Drug
Monitoring CINV, Mucositis, Diarrhea
Cases Pathophysiology + Pharmacotherapy
of Adverse Effects of Targeted Therapies

Pathophysiology – Symptom
Management in Advanced Cancer Lecture
Symptoms Management in Palliative Care - Cases
Pathophysiology of Bone Marrow Disorders Pharmacology – ESAs + GCSF

Hematological Toxicities -

Pathophysiology -
Hematological
Malignancies Lecture Pharmaceutics – Novel Dosage Forms (Pediatrics)
Maintenance Therapy + Monitoring – Pediatrics, Pharmacogenomics Lecture

Pathophysiology - Dysregulation of the Immune System Lecture -
related
reactions

Pathophysiology – Intro to Transplant Pharmacology of anti-
rejection agents
Pharmacokinetics /TDM
Solid Organ Cases Pharmacology – Immunosuppressants + DMARDs

Pharmacology IBD –
local to
systemic
treatments
IBD Cases

RADIOTHERAPY

RADIOTHERAPY TECHNIQUES

1. Tumor localization

Radiological diagnostic procedures – X-ray, ultrasound, CT scan, MRI, Mammogram-Radio nuclide investigation Tumor localization & check film and application of simulation in radiotherapy.

2. Treatment planning

CT planning-MRI planning-Interpretation of treatment prescription-Record keeping relevant to planning – patient position, support, immobilization, Land marks Mould room techniques and immobilization.Treatment positioning in radiotherapy to various cancers; CNS-benign-pituitry-craniophan. Malignant tumor-primary and secondary; orbit-eye –middle ear-parotid-buccal mucosa-tongue-hard palate-maxillary antrum- naso pharynx- oropharynx- hypo pharynx- larynx- oesophagus- media sternum- lung- bladder- prostate-penis- testis-cervix- ,body of the uterus—vagina-valva-lympoma

3. External beam therapy practical experience

Care of machine-Set up single, multiple fields-Use of wedges, shields and tissue compensators- Use of beam directional devices, methods of patient immobilization-Knowledge of technique involving electron beam therapy-moving beam therapy-conformal therapy-stereo tactic radio surgery and radiotherapy-Handling emergencies in Teletherapy

4. Mould room technique:

Construction of casts-Construction of applicator and moulds-Construction of shields

5. Brachytherapy

Principle of brachytherapy;intestritial-intracavitary-surface mould-intra luminal- Safe handling of small sealed radioactive sources. Preparation, - Storage Brachytherapy source-Check x-ray Record keeping in relation to brachytherapy sources patient data
