MEDICINE (CVS)

Topic: **CHEST PAIN** سینے میں درد
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

a. Student should know the Anatomical and Patho-physiological basis for chest pain, e.g. pain arising from chest wall pleura, lung and myocardium
b. List of common causes of chest paid (Angina Pectoris, myocardial infarction, Pneumothorax, pleural effusion, pulmonary embolism, gastro esophageal reflux).
c. Relevant questions to elaborate and differentiate between causes.
d. Associated symptoms and risk factor. e.g breathlessness, fever, diabetes, hypertension, family history of IHD, sedentary life style and recent surgery (Hip and Prostrate).

MEDICINE (CVS)

Topic: **DYSPNOEA** سانس لینے میں تکلیف
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Definition of dyspnea, orthopnea and PND
b. Brief Anatomical basis of dyspnea with patho-physiological correlation e.g. role of lungs, heart and nervous mechanisms etc in the genesis of dyspnea.
c. List of common causes of dyspnea (cardiac failure, COPD, Central causes and metabolic causes e.g.
d. Relevant questions to elaborate and differentiate between common causes of dyspnea. e.g. onest, progression, severity and modifying factors of dyspnea etc.
e. Associated symptoms of dyspnea that further clarify cause of dyspnea, e.g. central chest pain suggesting IHD, fever and cough suggesting pneumonia

MEDICINE (CVS)

Topic: **PALPITATIONS** دل کی دھڑکن کا تیز ہونا
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Physiology of the electric system of the heart e.g. SA node, AV node, bundle of HIS, purkinje fibers
b. Definition. Onset of palpitation, whether continuous or episodic.
c. Precipitating factors e.g. Tea, Coffee, and drugs
d. Associate conditions e.g. Hyperthyroidism and pheochromocytoma.

MEDICINE (CVS)

Topic: **PULSE**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know 1 rate, 2 rhythm, 3 character, 4 volume, and condition of the vessel wall and 5 comparision of pulses.
b. Detail of hypokinetic, water hammer pulse, pulses paradoxus and pulses altermans.
c. Causes of decreases pulse pressure
d. Causes of increased pulse pressure

MEDICINE (CVS)

Topic: **CARDIAC AUSCULTATION**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Anatomy and surface Anatomy of heart valves.
b. Physiology of cardiac cycle
c. How are the 1st, 2nd, 3rd and 4th hearts sound produced?
d. Causes of increased intensity of 1st heart sound. Causes of decreased intensity of 1st heart sound
e. Splitting of 2nd heart sound
f. Murmurs. Systolic, diastolic, causes
g. Pericardial rub

MEDICINE (PULMONOLOGY)

Topic: **COUGH** کھانسی
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Describe anatomical basis and patho-physiological correlation of cough and dyspnea with emphasis on common respiratory disorder e.g. Upper respiratory tract infection.
b. Knows important causes of dry cough, cough with expectoration and cough with blood (Hemoptysis)
c. Knows relevant questions regarding history e.g. duration, mode of onset, associated relieving and aggravating factors
d. Discuss relevant area of history and physical examination to suspect common obstructive/ reversible airway diseases with emphasis on bronchial asthma and emphasis on COPD and its common complications.
e. Should know the MRC grades of Dyspnoea

MEDICINE (PULMONOLOGY)

Topic: **EXPECTORATION/HAEMOPTYSIS**
بلغم / تھوک میں خون ا نا
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Describe anatomical basis and patho-physiological correlation of cough and sputum with emphasis on common respiratory disorders.
b. Discuss common causes/mechanisms of productive cough with emphasis on common respiratory diseases causing copious purulent sputum
c. Discuss relevant history to suspect bronchiectasis and lung abscess.
d. Relevant questions regarding causes of hemoptysis like low grade fever, anorexia weight loss and family history TB.
e. Should know different causes of hemoptysis

MEDICINE (PULMONOLOGY)

Topic: **WHEEZE AND CREPITATIONS**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Brief physiology / anatomy of respiratory system
b. Knows the definition of rhonchi, wheeze and crepitations, how are they produced
c. Should know the condition in which rhonchi, wheeze and crepitations are produced.
d. Emphysis on bronchial asthama, COPD,TB, Bronchiectasis and ILD.

MEDICINE (PULMONOLOGY)

Topic: **BREATH SOUNDS AND ADDED SOUNDS**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should be able to define vesicular breathing, bronchial breathing and vesicular breathing with prolong expiration and should know its causes.

b. Should know the definition of rhonchi, crepitations and wheeze
c. Should know common conditions e.g. wheeze and rhonchi in bronchial asthama. Crepitation in bronchiectasis, TB and ILD.

MEDICINE (PULMONOLOGY)

Topic:	**PRINCIPALS OF PERCUSSION**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form
Learning outcome

a. Should know the surface anatomy of lobes of the lung, heart and liver.
b. Knows important steps of percussion.
c. Should be able to describe the underlying state of the lung after percussion e.g. dullness in pleural effusion, hyperresonance in collapse

MEDICINE (NEUROLOGY)

Topic:	**COMA/LOSS OF CONSCIOUSNESS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form
Learning outcome

a. Should be able to define, COMA and its grades
b. Anatomy &Physiology of cerebral cortex and reticular activating system (RAS)
c. Should know common causes e.g. strokes, hypoxia, hypothermia, hypoglycemia or traumatic injuries such as head trauma , pharmaceutical agents , and rule out psychogenic causes.

MEDICINE (NEUROLOGY)

Topic:	**SYNCOPE**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**

No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Define syncope.
b. True syncope / false
c. Explain term dizziness, funny turns & blackouts.
d. List of common Causes (CNS, Cardiac, Vasovagal).
e. Associated features.
f. Differentiating from seizures & syncope.

MEDICINE (NEUROLOGY)

Topic: **HEADACHE**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Definition and its types, acute single episode, acute recurrent attacks, subacute onset and chronic headache, migraine.
b. Important points in history for the evaluation of cause.
c. Associated symptoms e.g. vomiting, diplopia (other visual symptoms), hemiparesis/hemiplegia.
d. Differentiating from primary & secondary headache.

MEDICINE (NEUROLOGY)

Topic: **MOTOR WEAKNESS**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should know the definition of monoplegia, paraplegia, hemiplegia, tetraplegia, hemiparesis, hemiplegia and grades of motor weakness.
b. History of weakness (acute, chronic, episodic and persistent).
c. True and perceived muscle weakness
d. Proximal and distal muscle weakness
e. Types &Causes of motor weakness

MEDICINE (NEUROLOGY)

Topic:	**UPPER AND LOWER MOTOR NEURON LESIONS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form
Learning outcome

a. Should know the brief anatomy of the brain and the spinal cord especially the corticospinal tract.
b. The clinical features and causes of upper motor and lower motor neuron lesions
c. Difference between the upper motor and lower motor neuron lesions

MEDICINE (NEUROLOGY)

Topic:	**SENSORY DISORDERS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form
Learning outcome

a. Should know and map out the dermatomes
b. Should map out any deficit separately for each modality (pain, temperature, vibration two point discrimination, joint position sense)
c. Should be able to define where is the lesion
d. Should be able to differentiate the types of lesion e.g.
    a. Glove and stocking distribution
    b. Complete sensory loss

c. Dissociated sensory loss

MEDICINE (NEUROLOGY)

Topic:	**INVOLUNTARY MOVEMENT**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form

Learning outcome

a. Should know the anatomy and physiology of the brain
b. Should know the definition and causes of the following disorder
    a. Tics
    b. Tremor
    c. Chorea
    d. Athetosis
    e. Dystonia
    f. Ballismus
    g. Myoclonus

MEDICINE (NEUROLOGY)

Topic:	**INVOLUNTARY MOVEMENT**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form

Learning outcome

a. Should know anatomy of sensory and motor cortex responsible for speech. Role of cerebellum in speech.
b. Should be able to define dysarthria dysphasia, and dysphonia
c. Should know whether the speech is fluent, grammatical, meaningful.
d. Classification of dysphasia, broca's, (expressive), Wernickes receptive, conduction aphasia, transcortical dysphasia

MEDICINE (NEUROLOGY)

Topic: **INVOLUNTARY MOVEMENT**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should know the anatomy of the brain and the spinal cord
b. Definition of tone and its types,
c. Should know the conditions in which the tone is increased
d. Conditions in which the tone is decreased.

MEDICINE (GIT)

Topic: **ASCITES**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

- Should be able to define ascites
- Classify according to the normal or the diseased peritoneum e.g. normal peritoneum causes are heart failure, cirrhosis, nephrotic syndrome and disease peritoneum causes are infection and malignancy
- Discuss Pathophysiology of ascites
- Discuss and describe Clinical features of ascites as symptoms of abdominal distention, pain, bloating, dyspnea
- Stage ascites as 1,2,3,4

MEDICINE (GIT)

Topic: **JAUNDICE**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

- Should be able to discuss and describe
- Bilirubin metabolism and pathophysiology of Jaundice as increased bilirubin production , decrease bilirubin uptake, obstruction in biliary tree.
- Relevant questions to elaborate and differentiate between different causes of jaundice for example Pre-hepatic, hepatic and post hepatic jaundice
- Associated symptoms of jaundice that clarify cause like anemia, loss of appetite, fever, dark urine, clay stools and pruritus

MEDICINE (GIT)

Topic: **HEMATEMESIS**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should know the definition of hematemesis, malena and hematochezia,
b. Describe anatomical basis and patho-physiological correlation of GI bleed e.g. potential bleeding areas and mechanism of bleeding from the gut.
c. Discuss common causes of GI bleeding including common life threatening conditions.
d. Describe and discuss relevant questions to differentiate between different causes of Hematemesis, for example: Peptic Ulcer, Variceal bleed, Gastric carcinoma, Mallory Weiss tear

MEDICINE (GIT)

Topic:	**CHRONIC DIARRHOEA**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form

Learning outcome

a. Should be able to define Chronic Diarrhea
b. Differentiate between acute and chronic diarrhea
c. Discuss Pathophysiological mechanism of osmotic, secretory , inflammatory and dysmotility diarrhea
d. Discuss relevant questions to differentiate between different causes of chronic diarrhea and to differentiate between small bowel from large bowel diarrhea
e. Describe associated symptoms like fever, weight loss, joint pains, travel abroad, drugs

MEDICINE (GIT)

Topic:	**DYSPHAGIA**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form

Learning outcome

a. Define dysphagia
b. Describe swallowing mechanism
c. Describe classification of dysphagia
d. Describe and discuss relevant questions on history to differentiate between Oro-pharyngeal and esophageal dysphagia (motor and mechanical causes)

MEDICINE (GIT)

Topic: **ABDOMINAL PAIN**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Describe and discuss importance of location of abdominal pain
b. Characters of pain whether colicky or dull, aggravating and relieving factors any radiation of pain.
c. Describe different causes depending upon site e.g. Epigastrium, right upper quadrant, Left upper quadrant, Right lower quadrant, Left lower quadrant, Peri umbilical region
d. Discuss relevant questions on history to differentiate between different causes of pain

MEDICINE (GIT)

Topic: **BLEEDING PER RECTUM**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Differentiate between malena and bleeding PR
b. Define upper and lower GI bleed
c. Discuss causes of lower GI bleed
d. Discuss relevant questions on history to differentiate between different causes of lower GI bleed
e. Discuss presentation of lower GI bleed as occult bleed, Hematochezia ,Shock and symptoms of anemia

MEDICINE (NEPHROLOGY)

Topic: **OLIGURIA, HAEMATURIA, DYSURIA**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should know the definitions of oliguria, haematuria and dysuria
b. Should know the anatomy of the renal tract
c. Should know the causes of haematuria, oliguria and dysuria

MEDICINE (NEPHROLOGY)

Topic: **INCONTINENCE**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should know the neurological control of the urinary bladder
b. Sympathetic, Para sympathetic and its nerve roots
c. Cortical representation of bladder in the Para central lobule
d. Should know the different types of urinary incontinence e.g. total incontinence, stress incontinence, Urge incontinence, over flow incontinence and enuresis.

MEDICINE (NEPHROLOGY)

Topic: **URINARY RETENTION**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should know anatomy and physiology of Urinary tract
b. Should know whether the obstruction is unilateral e.g. due to calculi, tumors, pelvi-ureteic junction, obstruction, retroperitoneal fibrosis and compression by lymph nodes, Bilateral obstruction due urethral stricture, urethral valves, prostatic hypertrophy, bladder tumors, calculi, pelvic malignancy and utero-vaginal prolapse.

MEDICINE (NEPHROLOGY)

Topic: **LUMBER PAIN**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the definition of renal colic aggravating and relieving factors.
b. Associated symptoms like nausea, vomiting, fever, dysuria, oliguria.
c. Should know important causes of lumber pain e.g. kidney stone, ureteric stones, and ureteric spasm.
d.

MEDICINE (NEPHROLOGY)

Topic: **NEPHROTIC OEDEMA**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should know the definition and diagnostic criteria of nephrotic syndrome
b. Presentation like swelling of eyelids, ascites and peripheral oedema and frothy urine.
c. Important causes of nephrotic syndrome e.g. minimal change GN, Membranous GN, Membranous-proliferative GN, Focal segmental GN
d. Others (diabetes mellitus, amyloid, neoplasia)

MEDICINE (RHEUMATOLOGY)

Topic: **JOINT DEFORMITY**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should be able to describe basic anatomy and pathophysiology of joint deformity like seen in Rheumatoid Arthritis, Osteoarthritis, Psoriatic arthritis
b. Should be able to describe types of joint deformity and various conditions in which joint deformity occurs
c. Should be able to ask relative questions regarding onset of arthritis, its progression, number of joints involved, symmetrical or asymmetrical
d. Treatment taken and history of joint diseases in family.

MEDICINE (RHEUMATOLOGY)

Topic: **APPROACH TO PATIENT WITH RHEUMATOLOGIC DISORDER (ARTHRITIS)**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should be able to describe basic anatomy and pathophysiology of joint deformity like seen in Rheumatoid Arthritis, Osteoarthritis, Psoriatic arthritis
b. Should be able to describe types of joint deformity and various conditions in which joint deformity occurs
c. Should be able to ask relative questions regarding joint deformity and etiology

MEDICINE (RHEUMATOLOGY)

Topic: **APPROACH TO PATIENT WITH VASCULITIS**
Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Brief anatomy and patho-physiology of Vasculitis (Inflammation of blood vessel i.e. Arteries)
b. Able to describe various symptoms of Vasculitis like fever, pain, weight loss, anorexia, headache, proximal muscle weakness, hypertension, hemoptysis, hematemesis, vascular involvement of eye
c. Relevant questions to differentiate between common cause of Vasculitis, like Giant cell arteritis, Takayasu Arteritis, Wagner Granulomatosis, Good Pasture syndrome and Polyarteritis Nodosa

MEDICINE (RHEUMATOLOGY)

Topic: **MUSCLE WASTING**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Should be able to describe wasting of muscles
b. Brief Anatomy and pathophysiology of wasting of muscles
c. Describe where wasting of small muscles of hand, muscles of face, proximal muscle of hip and shoulder girdle occur
d. Describe wasting whether it is generalized as a part of malnutrition or any chronic illness like Tuberculosis, Rheumatoid arthritis or Malignancy

MEDICINE (ENDOCRINOLOGY)

Topic: **SYMPTOMS OF ENDOCRINE DISORDER**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: **45 minutes**

Student feedback form

Learning outcome

a. Student should know the anatomy of the pituitary fossa, physiology of the pituitary gland, adrenal gland and thyroid.
b. Manifestation of endocrine disorder e.g. palpitations weight loss, weight gain, darkening of skin, menstrual disorder, decreased libido etc.
c. Define a clinical syndrome
d. Match it to a gland malfunction
e. Define clinical syndromes associated with too much or too little secretion

MEDICINE (ENDOCRINOLOGY)

Topic: **WEIGHT LOSS**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**

Student feedback form

Learning outcome

a. Student should know that it is non-specific feature of chronic diseases and depression
b. It is associated with malnutrition, chronic infection and infestations, HIV, Malignancy, diabetes and hyperthyroidism
c. Most important is the documentation of weight loss.

MEDICINE (ENDOCRINOLOGY)

Topic: **WEIGHT GAIN**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**

Student feedback form

Learning outcome

a. student should know the anatomy and function of the thyroid gland
b. Causes of hypothyroidism

c. Clinical features of hypothyroidism

MEDICINE (ENDOCRINOLOGY)

Topic:	**INTOLERANCE TO COLD/HEAT**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form

Learning outcome

a. Student should know the functions of thyroid gland
b. Symptoms when the thyroid gland is hyper functioning
c. Symptoms when the thyroid gland is hypo functioning
d. Causes of hypo and hyper-thyroidism

MEDICINE (ENDOCRINOLOGY)

Topic:	**GROWTH DISORDER**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/case history)**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes**

Student feedback form

Learning outcome

a. Should know the anatomy and physiology of pituitary gland adrenal gland and thyroid gland
b. Hyper secretion of the growth hormone causing acromegaly
c. Addison disease causing weight loss
d. Associated features like secondary sexual characters, menstrual irregularities, skeletal abnormalities.

MEDICINE (ENDOCRINOLOGY)

Topic: **GYNECOMASTIA**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the definition of gynecomastia
b. Should know role of increase in the estrogen/androgen ratio, Syndromes of androgen deficiency e.g. Klinefelter and Kallman syndrome
c. It may result from liver disease or testicular tumors
d. Drugs causing gynecomastia e.g. diethylstilbestrol, spironolactone, cimetidine, digoxin, testosterone and marijuana

MEDICINE (ENDOCRINOLOGY)

Topic: **DIABETES**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the definition of diabetes. Type I and type II other causes of diabetes e.g. diabetes inspidus, Gestational diabetes, steroids, HIV drugs, thiazide diuretics, Anti-Psychotic drugs, pancreatitis, hemochromatosis, cystic fibrosis, pancreatic cancer, Cushing syndrome acromegaly.
b. Comparision of Type I with Type II
c. Screening for diabetes mellitus
d. Drug treatment (Oral hypoglycemic / insulin)

MEDICINE (ENDOCRINOLOGY)

Topic: **HIRSUTISM**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the definition
b. Student should know if menstruation is normal it is almost certainly no increased testosterone production
c. If menstruation abnormal the cause is polycystic ovary syndrome the cause is androgen hyper secretion
d. Other cause of hirsutism with irregular menstrual is late onset congenital adrenal hyperplasia

MEDICINE (INFECTIONS)

Topic: **FEVER**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the definition of fever. Patterns of fever whether continuous, intermittent, relapsing or remitting.
b. Definition of PUO
c. Should know different causes of fever e.g. infection, infestations, connective tissue disorders, neoplasms, auto immune diseases and factitious fever.

MEDICINE (INFECTIONS)

Topic: **TETENUS**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the causative organisms,
b. Sign and symptoms of tetanus
c. Incubation period
d. Differential diagnosis
e. Bad prognostic signs

MEDICINE (INFECTIONS)

Topic: **MALARIA**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the causative organisms
b. Endemic areas, life cycle of malarial parasite
c. Protective factors
d. Different types of malaria, especially cerebral malaria
e. Complication and poor prognostic signs
f. Differential diagnosis

MEDICINE (INFECTIONS)

Topic: **ENTERIC FEVER**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form

Learning outcome

a. Student should know the causative organism
b. Incubation period, faecal oral spread
c. Presentation
d. Diagnosis and complication

MEDICINE (INFECTIONS)

Topic: **HELMINTHIC INFECTION**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**

Student feedback form

Learning outcome

a. Student should know the causative organisms
b. The definite host, intermediate host, mode of transmission
c. The manifestation (organs involved)
d. The life cycle of each helminthic

MEDICINE (HAEMATOLOGY)

Topic: **SYMPTOMS OF HAEMATOLOGY DISORDERS**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**

Student feedback form

Learning outcome

a. student should know that the patient can present with symptoms of weakness, ill health, lethargy, palpitation, light headedness, decrease concentration etc.
b. If iron deficiency anemia, the symptoms are progressive
c. In megaloblastic anemia, the symptoms are pin and needle sensation and neuropathy

MEDICINE (HAEMATOLOGY)

Topic: **ANEMIA**
Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the definition of anemia
b. Normal hemoglobin and red cell count in males and females
c. Should be able to interpret the complete blood count report and on the basis of MCV classify anemia as hypochromic microcytic/macrocytic anemia

MEDICINE (HAEMATOLOGY)

Topic: **IRON DEFICENCY ANEMIA**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know definition of anemia
b. Normal Hb and RBC counts in male and females
c. Causes of iron deficiency of anemia
d. From the history he should be able to make the diagnosis e.g. blood loss due to menorrhagia, haemorroids, drugs e.g. NSAIDS

MEDICINE (HAEMATOLOGY)

Topic: **MEGALOBLASTIC ANEMIA**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. He should know definition and diagnostic criteria of macrocytic/megaloblastic anemia
b. Metabolism and absorption of B12

c. Different causes of megaloblastic anemia
d. Signs and symptoms of megaloblastic anemia
e. Parasite responsible for megaloblastic anemia

MEDICINE (HAEMATOLOGY)

Topic: **BLOOD FILM INTERPETATION**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should be able to interpret a CP report
b. Should be able interpret Hb, RBCs and MCV and classify anemia as hypochromic microcytic/megaloblastic
c. Should know the normal WBC count and know the causes of leucopenia and leukocytosis
d. Should know the normal platelet count and causes of thrombocytopenia and thrombocytosis
e. ESR normal value. Its prognostic and diagnostic value. Causes of raised of ESR

MEDICINE (DERMATOLOGY)

Topic: **Anatomy, Physiology of Skin Related Dermatology**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a) Student should be able to recall skin anatomy
b) Student should understand the functions of skin & related dermatology

Topic: **CLINICAL EVALUATION OF RASH**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Student feedback form
Learning outcome

a. Student should know the geography of rash. Individual lesions e.g. macule, papule and pustule, whether they come and go
b. Are the nails affected.
c. On set of rash and associated symptoms e.g. fever (viral exanthemas)
d. Is the rash itchy or not
e. Is the rash dry or creepy

MEDICINE (DERMATOLOGY)

Topic: **SKIN MANIFESTATIONS OF SYSTEMIC DISEASES**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

a. student should know the definition and appearance of erythema nodosum, Erythema multiform, Erythema chronicummigrans, Erythema marginatum, pyodermagangrenosum and vitiligo
b. Student should know the condition in which they appear and associated medical conditions e.g. sarcoid SLE, DM drugs Vasculitis.

PHARMACOLOGY & THERAPEUTIC

LEARNING OUTCOMES

PROFESSOR DR SEEMI GULL

LECTURE 1

Topic: **BASIC CONCEPTS (INTRODUCTION TO THE SUBJECT)**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of the session students should be able to

1. Define Pharmacology &branches/divisions of Pharmacology
2. Correlating the significance of learning Pharmacology in field of medicine
3. Define drug
4. Describe the nature and sources of drugs.
5. Standard sources of drug information

PHARMACOKINETICS

LECTURE 1
Topic: **PHARMACOKINETICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome
At the end of the session students should be able to

1. Enlist different dosage forms of drugs& their use in different clinical situations
2. Discuss mechanism and factors affecting permeation of drugs
3. Describe drug transport across the blood brain barrier & placental barrier

LECTURE 2
Topic: **PHARMACOKINETICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form

Learning outcome

At the end of the session students should be able to

1. Describe various routes of drug administration with merits &demerits of each route.
2. Describe the absorption of drugs and factors affecting drug absorption.

LECTURE 3

Topic: **PHARMACOKINETICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of the session students should be able to

1. Define bioavailability of drugs & explain important factors which effect bioavailability
2. Outline various drug reservoirs distribution & redistribution of drugs
3. Define volume of distribution of drugs & relate its significance with loading dose, plasma half-life & treatment of over dosage toxicity of drugs
4. Discuss the plasma protein binding, steady state concentration and their clinical significance in relation to drugs toxicity.

LECTURE 4

Topic: **PHARMACOKINETICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe Biotransformation list major Phase I and Phase II metabolic reactions with examples.
2. What are the outcomes of biotransformation?

LECTURE 5

Topic: **PHARMACOKINETICS**
Lecture: **30 minutes**

Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Discuss the clinical consequences of Zero and First order kinetics.
2. Describe the drug interactions due to enzyme induction and enzyme inhibition& list the important drugs that are known to cause it.
3. Explain the basic principles by which drugs are excreted from the body

LECTURE 6
Topic: **PHARMACOKINETICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Discuss the clinical significance of clearance of drugs from the body by any route and factors which affect it.
2. Describe different type of drug interactions & the clinical implications of different type of drug interactions
3. Adverse drug reactions in general.
4. Explain the mechanism of drug allergy & types of allergic reactions
5. Discuss the role of Pharmacogenetics on actions & doses of drugs
6. Describe the differences between idiosyncrasy & hypersensitivity

PHARMACODYNAMICS

LECTURE 1
Topic: **PHARMACODYNAMICS**
Lecture: **30 minutes**

Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Various mechanism of action of drugs
2. Describe non receptor mechanism of action of drugs.
3. Describe the primary properties of a drug receptor, and how a receptor differs from an inert binding site.
4. List four different types of targets (receptors) by which drugs can interact to exert their biological effects.

LECTURE 2

Topic:	**PHARMACODYNAMICS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Define the following drug properties: agonist, antagonist, partial agonist,
2. Differentiate between synoptic, allosteric and indirect agonist
3. Differentiate between competitive, irreversible & allosteric antagonist.
4. Describe graded dose-response curve for a drug,
5. Define drug potency and efficacy.

LECTURE 3

Topic:	**PHARMACODYNAMICS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe several different signal transduction mechanisms by which agonists exert their effects.

2. Explain the difference between selectivity and specificity of drug effect.
3. Discuss significance of receptor regulation

LECTURE 4

Topic: **PHARMACODYNAMICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. What is quantal response and quantal dose response curve
2. Describe what is meant by the term Therapeutic Window.
3. Define the terms ED50, LD50, TD50, and Therapeutic Index.

PHARMACOGENOMICS

LECTURE 1

Topic: **PHARMACOGENOMICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. What is idiosyncrasy and idiosyncratic reactions?
2. Different genetic basis underlying variable drug responses

DOSAGE FORMS AND PRESCRIPTION WRITING

LECTURE 1

Topic: **PHARMACOGENOMICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form

Learning outcome

At the end of lecture student should be able to

1. Describe how different dosage forms alter the absorption, distribution and onset of action of drugs.
2. Describe different dosage forms, their correct names and special characteristics.
3. Describe the different parts of a prescription and their importance.
4. List from memory the meaning of the abbreviations: q.d., b.i.d., t.i.d., q.i.d., p.r.n, non.rep. q., p.o., p.c., a.c.

AUTONOMIC NERVOUS SYSTEM SESSION

LECTURE 1

Topic: **Introduction to the ANS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Student feedback form

Learning outcome

At the end of lecture student should be able to

1. Review the anatomical organization of the ANS.
2. Define the neurotransmitters at the autonomic ganglia and the target organs.
3. Define the receptors at the autonomic ganglia and the target organs.
4. Compare/contrast the physiological responses of end organs produced by activation of the parasympathetic (i.e. acetylcholine) and sympathetic (i.e. norepinephrine) nervous systems.
5. Compare & contrast the opposing actions of the parasympathetic and sympathetic nervous systems.
6. Discuss predominant tone and the regulation of doubly-innervated organs.

Prototype

Acetylcholine, Norepinephrine, Epinephrine, Dopamine, Cholinomimetics.

CHOLINERGIC SYSTEM PROTOTYPE

LECTURE 1

Topic: **CHOLINERGIC SYSTEM PROTOTYPE**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe the steps in the synthesis, release and inactivation of acetylcholine.
2. List the anatomical locations of muscarinic and nicotinic receptors.
3. Deduce the therapeutic and adverse physiological effects of muscarinic or nicotinic receptor activation
4. Classify cholinergic drugs.

LECTURE 2

Topic:	**CHOLINERGIC SYSTEM PROTOTYPE**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Explain the difference between reversible or irreversible anticholinesterases.
2. Describe the effects of accumulated acetylcholine at muscarinic and nicotinic receptors in the periphery and the central nervous system.
3. List the therapeutic uses for and adverse side effects of reversible anticholinesterases.

Prototype drug
Physostigmine, Neostigmine

LECTURE 3

Topic:	**CHOLINERGIC SYSTEM PROTOTYPE**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe the pharmacological effects and clinical uses of organophosphate compounds

2. Describe the use and mechanism of action of pralidoxime, and explain why pralidoxime is not effective at reactivating all AChE.
3. Explain why anticholinesterase agents can be used as insecticides and chemical warfare agents, and discuss antidotes in case of poisoning.

Prototype drug

Sarin, Soman, Pralidoxime

PBL

1. Explain the mechanism of action of anticholinesterases.
2. Describe the pharmacological effects of anticholinesterases
3. Discuss the strategy for treatment of anticholinesterase intoxication from Soman and Sarin

CHOLINOLYTICS: ANTIMUSCARINICS

LECTURE 1

Topic: **ANTIMUSCARINICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe the pharmacological and adverse effect of anticholinergic drugs and contraindications of anticholinergic drugs in general
2. Prototype type drug : Atropine

LECTURE 2

Topic: **ANTIMUSCARINICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Therapeutic classification of anti-muscarinic agents

2. Explain the therapeutic uses of anti-muscarinic for bronchoconstriction, excessive salivation, motion sickness, mydriasis / cyclopedia, hyperactive carotid sinus reflex, AV block, intestinal spasticity / diarrhea.
3. Explain the side effects of anti-muscarinic, including xerostomia, blurred vision, photophobia, and tachycardia, difficulty in micturition, hyperthermia, glaucoma, and mental confusion in the elderly.
4. Explain contraindications of anti-muscarinic.
5. Able to select most suitable agent for specific indication in a specific patient

Prototype drug Ipratropium bromide, Glycopyrrolate etc.

SKELETAL MUSCLE RELAXANTS

LECTURE 1

Topic: **Neuromuscular Blocking Agents**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

Neuromuscular Blocking Agents

At the end of lecture student should be able to

1. List the major indications for the clinical use of neuromuscular blocking agents (skeletal muscle relaxants).
2. Contrast and compare the uses and limitations of non-depolarizing (competitive) and depolarizing (competitive) nicotinic receptor antagonists at the neuromuscular junction.
3. Explain how the effects of a non-depolarizing blocker can be rapidly terminated by the administration of an anticholinesterase and atropine.

Prototype Drugs:

1. Non Depolarizing Blockers:
2. Tubocurarine, Pancuronium etc.
3. Depolarizing Blocker:
4. Succinylcholine

LECTURE 2

Topic: **Central Muscle Relaxants**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

Central Muscle Relaxants

At the end of lecture student should be able to

1. Enlist important spasmolytic commonly used to relieve muscular pains
2. Describe the MOA, merits and demerits of each agent.
3. Discuss the use of botulinum toxin in various disease & the adverse effects of excessive use especially in cosmetology.
4. Explain the use of Riluzole in.
5. To select a proper drug for particular patient.

INTRODUCTION TO THE SYMPATHETIC NERVOUS SYSTEM

LECTURE 1

Topic:	**SYMPATHETIC NERVOUS SYSTEM**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe the anatomy of the sympathetic nervous system.
2. Describe the biosynthetic steps & regulation of the biosynthesis of catecholamine's.
3. Explain the actions of the transmitters of the autonomic nervous system.
4. Describe the role and responses mediated by adrenergic receptors.
5. Describe how adrenergic hormones and receptors regulate cardiovascular function.
6. Describe the function of the adrenergic nerve terminal.
7. Describe how neuronal released norepinephrine regulates vascular & cardiac function.
8. Describe the inactivation pathways for catecholamines & which drugs affect them.

SYMPATHOMIMETICS

LECTURE 1

Topic:	**SYMPATHOMIMETICS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Student feedback form

Learning outcome

At the end of lecture student should be able to

1. Classification of sympathomimetics
2. Describe the actions of sympathomimetics with respect to receptor subtype selectivity.
3. Describe the uses of epinephrine.
4. Explain the actions of dobutamine, and clonidine in the treatment of cardiogenic shock & essential hypertension.
5. Enlist the uses and adverse effects of alpha agonist

Prototype drugs

Direct agonists: phenylephrine, norepinephrine, epinephrine, isoproterenol, dopamine, dobutamine.
Indirectly acting: tyramine, ephedrine, amphetamine
other: methyldopa, albuterol,

SYMPATHOLYTICS

LECTURE 1

Topic: **Alpha blockers**

Lecture: **30 minutes**

Interactive Session: **15 minutes**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Student feedback form

Learning outcome

At the end of lecture student should be able to

1. Describe the actions of adrenergic blocking drugs with regard to receptor subtype and selectivity.
2. Explain the use of alpha-receptor blocking drugs in the treatment of hypertension and benign prostatic hyperplasia (BPH).
3. Explain why an alpha-1 selective antagonist (e.g. prazosin) will reduce blood pressure with less reflex tachycardia than a drug that antagonizes both alpha-1 and alpha-2 receptors (e.g. phentolamine).

Prototype

Phentolamine, Prazosin, Butoxamine

LECTURE 2

Topic: **Beta blockers**

Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome
At the end of lecture student should be able to

1. Enlist selective nonselective beta blockers.
2. Uses of selective & nonselective beta blockers.
3. Advantages/uses of beta blocker with ISA, MSA, and drugs having both alpha & beta blockers.
4. Explain the adverse effects use of beta-receptor blocking drugs in the treatment of hypertension, angina, and post MI.
5. Absolute & relative contraindications of use of beta blockers.

Prototype drugs: propranolol, atenolol, pindolol, labetalol,esmolol

RENAL PHARMACOLOGY

LECTURE 1
Topic: **Diuretics**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of the lecture, student should be able to:

1. Review processes involved in the formation of urine by the kidney.
2. Discuss renal transport processes.
3. Describe the actions of the major classes of diuretics on the formation of urine and the excretion of sodium, potassium and other cautions

LECTURE 2
Topic: **Diuretics**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of the lecture, student should be able to:

1. Explain the therapeutic indication, efficacy, and side effects of the major classes of diuretics.
2. Describe major differences between thiazide and loop diuretics regarding uses and adverse effects.
3. Discuss the use of diuretics in the treatment of essential hypertension and congestive heart failure, as well as in other edema states.

Prototype drug of each group

Carbonic Anhydrase Inhibitors: acetazolamide
Thiazides: chorothiazide,
Loop Diuretics: furosemide,
Osmotic Diuretics: mannitol
Potassium Sparing: amiloride, spironolactone

PHARMACOLOGY OF CARDIOVASCULAR DRUGS

LECTURE 1

Topic:	**Antihypertensive Agents**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Review physiological control of blood pressure
2. Discuss pathophysiology of essential and secondary hypertension.
3. Classify hypertension in various stages.
4. Discuss the potential impact of different lifestyle modifications on arterial blood pressure in patients with hypertension.

LECTURE 2

Topic:	**Antihypertensive Agents**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Explain the mechanisms of action of the major classes of antihypertensive drugs.
2. Discuss mono therapy in Stage 1 hypertension & contrast this with the recommended first line mono-therapy for a patient with comorbidity especially diabetes or chronic kidney disease, systolic heart failure.
3. Explain the rationale for treatment with multiple drugs in patients with an arterial blood pressure that is >20/10 mmHg higher than the target goal.

LECTURE 3 &4

Topic:	**Antihypertensive Agents**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Explain the major side effects of ACE inhibitors (& ARBs) and thiazide diuretics.
2. Discuss the major contraindications for the use of ACE inhibitors (& ARBs).
3. Explain the mechanism of action of various groups of vasodilators ,especially calcium channel blockers
4. Discuss pharmacotherapy choices for treating *chronic essential* hypertension during pregnancy.
5. Discuss the treatment of hypertensive emergencies & one of the most feared complications of such treatment.

Drug List:
ACE inhibitors (ACEIs): captopril, enalapril, lisinopril
Angiotensin Receptor Blockers (ARBs): losartan, candesartan, valsartan
Beta-blockers: propranolol, metoprolol, nadolol, nebivolol & others
Combined alpha & beta-blockers: labetalol, carvedilol
Calcium channel blockers: diltiazem, verapamil & dihydropyridines (amlodipine, nifedipine)
Thiazide diuretics: hydrochlorothiazide

Less Commonly Used:
Direct Vasodilators: hydralazine, minoxidil, nitroprusside
Alpha-2 agonists: clonidine, methyldopa (pregnancy)
Alpha blockers: doxazosin, prazosin, terazosin

Hypertension PBL

At the end of lecture student should be able to

1. Describe the health related risks of elevated blood pressure.
2. Explain how different antihypertensive drugs lower blood pressure.
3. Discuss the use of antihypertensive drugs when co-morbid conditions exist.
4. Describe the use of combinations of antihypertensive drugs to control blood pressure.

ANTI-ANGINAL DRUGS

LECTURE 1

Topic: **ANTI-ANGINAL DRUGS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. List the major determinants of cardiac oxygen consumption.
2. Describe the pathophysiology of the three major forms of angina.
3. List the strategies for prophylaxis of angina & drug to treat acute attack.

LECTURE 2

Topic: **ANTI-ANGINAL DRUGS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Routes of administration of nitrates, nitrites and its significance
2. Contrast the therapeutic & adverse effects of nitrates, beta-blockers & calcium channel blockers used for treating angina
3. Important drug interactions of nitrates.
4. Explain why the combination of a nitrate with a beta-blocker or a calcium channel blocker may be more effective than either alone.
5. Explain the current standard of care regarding the use of fibrinolytics in unstable angina.

Prototype drugs
Nitrates: nitroglycerin, isosorbide di-nitrate.
Calcium Channel Blockers: nifedipine, verapamil, diltiazem.
Beta Blockers: propranolol.
Related drugs: glucagon, di-pyridamole, sildenafil, amyl nitrite.

MANAGEMENT OF CHF:

LECTURE 1
Topic: **Treatment of Systolic & Diastolic Failure**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Define the concepts of preload, myocardial contractility and afterload as determinants of left ventricular performance.
2. Explain the difference between systolic dysfunction and diastolic dysfunction in congestive heart failure.
3. Explain how congestive heart failure results in the activation of 3 different compensatory mechanisms
4. Explain the rational for the use of diuretics, inotropic agents & vasodilators in the treatment of systolic heart failure.
5. Explain the beneficial effects of ACE inhibitors (ARBs), aldosterone antagonists and beta blockers on the heart in patients with systolic heart failure.
6. Explain the rationale for using beta-adrenergic blockers in the treatment of diastolic heart failure.
7. Explain the beneficial effects of morphine in treating acute pulmonary edema.

Drug List:
Diuretics: furosemide, torsemide.
Positive inotropes: dobutamine, dopamine, digoxin.
Vasodilators: nitrates (nitroglycerin, isosorbide di-nitrate, sodium nitroprusside), nesiritide, hydralazine.
Inhibitors of the Renin-Angiotensin-Aldosterone System: ACE inhibitors (captopril, enalapril), ARBs (valsartan, losartan), spironolactone.
Beta blockers: carvedilol, metoprolol.
Calcium channel blockers: diltiazem, verapamil.

LECTURE 2

Topic:	**Treatment of Systolic & Diastolic Failure**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Explain how digoxin produces a positive inotropic effect by inhibiting the Na/K pump.
2. Describe the effect of CHF on the slope and position of the Frank-Starling relationship, and how digoxin alters this relationship.
3. Discuss digoxin's use for controlling the ventricular rate in patients with atrial tachy-arrhythmias.
4. Describe the cellular mechanisms by which digoxin can produce serious cardiac arrhythmias (3rd degree AV block, bigeminy, ventricular tachycardia).
5. Explain how digoxin toxicity can be enhanced by hypokalemia, hyper-calcemia and drug interactions with anti-arrhythmic and diuretics.
6. List some of the more common "non-cardiac" signs and symptoms of digoxin toxicity (that serve as a "warning sign").
7. Describe the steps that should be taken to diagnose and treat digoxin toxicity.

ANTIARRHYTHMICS

LECTURE 1

Topic:	**Cardiac Arrhythmias**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Explain how myocardial ischemia can result in a disturbance in cardiac conduction.
2. Explain how a disturbance in cardiac conduction can result in the development of reentry.
3. List the three major conditions or requirements necessary for reentry to occur.
4. Explain the difference between 1st degree, 2nd degree and 3rd degree AV node block.
5. Describe how normal Purkinje fiber automaticity can be increased to produce an ectopic pacemaker.
6. Describe 2 types of abnormal automaticity that can produce arrhythmias. List two examples of conditions or drugs that can cause each form of abnormal automaticity.

LECTURE 2

Topic: **Antiarrhythmic**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. List the primary channel or receptor mechanisms by which Class I, II , III and IV antiarrhythmic drugs produce their effects.
2. Recognize and categorize different antiarrhythmic drugs by their mechanism of action.
3. Explain how Class I drugs increase the Effective Refractory Period (ERP).
4. Explain how Class I drugs abolish reentrant arrhythmias.
5. Describe the use of drugs commonly used for treatment and prophylaxis of post-myocardial infarction ventricular ventricular-fibrillation.
6. Pharmacokinetics of lignocaine and its arrythmogenic potential

LECTURE 3
Topic: **Antiarrhythmic**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe the drugs for management and maintenance of remission of PSVT, mode of administration and adverse effects of adenosine and esmolol.
2. Explain the multiple mechanisms by which amiodarone may exert its antiarrhythmic effects against atrial and ventricular arrhythmias.
3. Discuss the pharmacokinetic properties and adverse reactions of amiodarone.
4. Describe the major therapeutic goals in treating patients with chronic atrial fibrillation.
5. Explain which drugs may be useful in the treatment of chronic atrial fibrillation

Important drugs to be discussed

Class I: Lidocaine, Quinidine, Procainamide.
Class II: Propranolol, Atenolol, Metoprolol
Class III: Amiodarone, Sotalol
Class IV: Verapamil, Diltiazem
Misc.: Adenosine

ANTICOAGULANTS, THROMBOLYTICS& ANTIPLATELET DRUGS

LECTURE 1
Topic: **ANTICOAGULANTS, THROMBOLYTICS & ANTIPLATELET DRUGS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe the general stages of the clotting process.
2. Describe the role of the major clotting factors in the coagulation scheme.
3. Define & Classify anticoagulants.
4. Describe the indications and contraindications for anticoagulant therapy.
5. Describe the mechanisms of action of heparins
6. Contrast HM Wand LMW heparins
7. Explain the procedures for treatment of overdosing with heparin

LECTURE 2
Topic: ANTICOAGULANTS, THROMBOLYTICS & ANTIPLATELET DRUGS
Lecture: 30 minutes
Interactive Session: 15 minutes
No. of slides: 12-15
Teacher: Assistant Prof. / Senior Registrar/Consultant
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe MOA of oral anticoagulants its kinetics with special reference to onset of action
2. Describe imp drug interactions of warfarin which may be potentially dangerous and
3. Justify the selection of specific anticoagulant oral/parenteral in a particular patient
4. Adverse reactions and management of over dosage toxicity
5. Describe the mechanism by which different antiplatelet agents exert their effects.
6. Describe the indications for use of thrombolytic agents, and their side effects.

Drug List:
Anticoagulants & Related Drugs: warfarin, heparin, vitamin K, protamine sulfate

THROMBOLYTICS

LECTURE 1
Topic: ANTICOAGULANTS, THROMBOLYTICS & ANTIPLATELET DRUGS
Lecture: 30 minutes
Interactive Session: 15 minutes
No. of slides: 12-15
Teacher: Assistant Prof. / Senior Registrar/Consultant
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to
Tenecteplase, reteplase
Antiplatelet Agents:
clopidogrel, ticlopidine, abciximab, aspirin
Antihyperlipidemics

1. Explain the mechanisms of action of binding resins (cholestyramine, colestipol) in the treatment of hypercholesterolemia.

2. Describe the mechanism of action of nicotinic acid and fibric acid derivatives (gemfibrozil) in the treatment of hypercholesterolemia and hypertriglyceridemia.
3. Explain the mechanism of action of HMG-CoA reductase inhibitors in the treatment of hypercholesterolemia.
4. Explain the mechanism of action of ezetimibe.
5. Describe the common side-effects related to hypo lipidemic drugs

Prototype drug: Cholestyramine, Colestipol, Nicotinic Acid, Gemfibrozil, Lovastatin, Ezetimibe

RESPIRATORY SYSTEM

LECTURE 1

Topic: **Treatment of Asthma**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Review the pathophysiology of asthma.
2. Describe the target sites for pharmacologic intervention in asthmatic patients & major subtypes of drugs used in the treatment of asthma.
3. Explain the beneficial aspects of aerosol drug formulations vs. oral drug formulations
4. Describe the role of cyclic AMP, cyclic GMP, and leukotriene in the regulation of bronchiolar smooth muscle and pulmonary vasculature.

LECTURE 2 & 3

Topic: **Treatment of Asthma**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Discuss treatment of acute asthmatic attack (including exercise-induced bronchospasm) & acute severe asthma.
2. Discuss drugs used for the treatment of chronic asthma & COPD

3. Rationalize the use of glucocorticoids in asthma.
4. Describe the adverse effects of prototype drugs & how to manage them.
5. List the drugs contra indicated in atopic asthma especially the adverse role of NSAIDS in asthmatics
6. Select drug/drugs for patients of children and geriatric patients and those with comorbidities
7. To enlist novel drugs for this disease.

Prototype drug
Bronchodilators

Albuterol, Formoterol, Antimuscarinics: Ipratropium
Xanthine Derivatives: Theophylline (rarely used, has a narrow TI)
Anti-inflammatory drugs
Degranulation Inhibitors: Cromolyn Sodium,
Corticosteroids: Beclomethasone, Prednisolone
Leukotriene pathway blockers: montelukast, zileuton
Antibodies: omalizumabn

MUCOLYTICS, COUGH SUPPRESSENTS

LECTURE 1

Topic:	**MUCOLYTICS, COUGH SUPPRESSENTS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. List the drugs that at the end of lecture student should be able to
2. Mechanism of action of mucolytic , cough suppressant and decongestants
3. Discuss the use of these agents& adverse effects of each.

PHARMACOLOGY OF GASTROINTESTINAL TRACT

LECTURE 1

Topic:	**Treatment of acid peptic disease**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Name strategies for treating peptic ulcer disease and specific drug groups with their mechanisms.
2. Describe some major side effects associated with the use of PPIs and cimetidine.
3. Pharmacokinetics of PPI with special reference to time of administration.
4. Describe MOA of mucosal protective agents

LECTURE 2

Topic:	**Treatment of acid peptic disease**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Discuss various regimens for eradication of H PYLORI induced peptic ulcer
2. Describe uses of anti-peptic drugs other than peptic ulcer
3. Discuss use of antacid and adverse effects of their long term use & drug interactions

Prototype drugs
Cimetidine, Omeprazole, Sucralfate, Bismuth Subsalicylate
Aluminum Hydroxide

SYMPTOMATIC TREATMENT OF CONSTIPATION

LECTURE 1

Topic:	**TREATMENT OF CONSTIPATION**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. List broad classes of laxatives and describe their mechanisms.

2. Discuss the role of laxative for specific indications.
3. Use of lactulose in prevention of hepatic encephalopathy
4. Describe the effects of laxative abuse

Important Drugs
Psyllium Seeds, Castor Oil, Lactulose, Senna, Aloe, Biscodyl, Docusate Sodium,

ANTIDIARHEALS

LECTURE 1
Topic: **ANTIDIARHEALS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Discuss the variety of drugs used for the treatment of diarrheal and motility disorders & their mechanisms of action.
2. List broad classes of drugs used to treat chemotherapy-induced emesis & describe their mechanism of action.

Antidiarrheal drugs: diphenoxylate, loperamide

IRRITABLE BOWEL SYNDROME

LECTURE 1
Topic: **IBS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Symptomatic treatment of diarrhea & constipation
2. Specific drug for diarrhea predominant & constipation predominant IBS. & their limited use because of adverse effects

Prototype
Alosetron, Prucalopride

INFLAMMATORY BOWEL DISEASE

LECTURE 1

Topic: **IBD**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Describe the therapeutic pyramid approach to inflammatory bowel diseases and how treatment choices are made.

Drugs groups used

Aminosalicylates, Corticosteroids, Immunomodulants,
TNF antagonists, ANTIEMETICS & Prokinetic drugs

LECTURE 2

Topic: **IBD**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of lecture student should be able to

1. Review the receptors in CTZ & vomiting Centre.
2. Act of vomiting, central & peripheral receptors involved in it.
3. Tell major drug groups & their MOA.
4. Enlist the drugs which have Prokinetic activity & when they should be prescribed.
5. Adverse effects of metoclopramide & how they can be managed.
6. Explain the combinations /regimens for prophylaxis & treatment of chemotherapy induced emesis

Prototype drugs:

Scopolamine, dimenhydrinate dronabinol, ondansetron, aprepitant
dexamethasone, Prokinetics: metoclopramide

CENTRAL NERVOUS SYSTEM

LECTURE 1

Topic: **Sedative Hypnotics**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Student feedback form

Learning outcome

By the end of this session, student should be able to

1. Define sedative hypnotics
2. Explain the cellular mechanisms by which benzodiazepines & barbiturates exert their sedative-hypnotic effects.
3. Discuss effect of different hypnotics on sleep pattern.
4. Classify BNZ according to duration of action
5. Explain the distinctive properties of buspirone, zolpidem & zaleplon.
6. Describe the major clinical indications
7. Discuss pharmacokinetics of BZP including route of administration for different indications pharmacokinetic and Pharmacodynamics tolerance to these drugs
8. Describe the side effects & enlist the agents causing hangover.
9. Treatment of over dosage toxicity of BZP

LECTURE 2

Topic: **Sedative Hypnotics**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Student feedback form

Learning outcome

At the end of this session, student should be able to

1. Discuss demerits of barbiturates and why not preferred for sedation and hypnosis
2. Describe the differences in the dose-depression relationships for benzodiazepines and barbiturates.
3. Select the drug for a particular patient to treat anxiety or to induce sleep

Drug list:

Benzodiazepines, BNZ Antagonist: flumazenil. Barbiturates: Misc.: buspirone, zolpidem, zaleplon

ANTI-PSYCHOTICS

LECTURE 1 & 2
Topic: **ANTI-PSYCHOTICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome
At the end of this session, student should be able to

1. Define psychosis & main pathophysiology
2. Describe the characteristics of subclasses of *classical* antipsychotics
3. Discuss why the antagonism of dopamine is central to the actions of *classical* antipsychotics
4. Discuss the depot preparations and when they are used
5. Enlist the clinical uses of chlorpromazine
6. Describe the side effects and toxicities of antipsychotic drugs (especially extrapyramidal side effects and how they can be managed

LECTURE 3
Topic: **ANTI-PSYCHOTICS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of this session, you should be able to

1. Explain the differences between *classical* and *atypical* antipsychotics regarding MOA, adverse effect profile
2. Discuss the uses of non-classical agents for diseases other than psychosis.

Prototype drugs:
Chlorpromazine, Haloperidol, Clozapine, Risperidone, Olanzapine**,** Antidepressants& Li

ANTI DEPRESSENTS

LECTURE 1
Topic: **ANTI DEPRESSENTS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**

No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, you should be able to:

1. Tell major neurotransmitter derangement as the main cause of endogenous depression.
2. Explain mechanism of action of antidepressants
3. Discuss the significance of multi week latency to onset of action of antidepressant effect
4. Describe the most common therapeutic indication for tricyclic antidepressant other than depression
5. List the adverse effects that occur during chronic therapy and with an acute overdose of tricyclic antidepressants
6. Enlist contraindications of this drug group.

LECTURE 2
Topic: **ANTI DEPRESSENTS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to

1. Identify the selective serotonin reuptake inhibitors, list their major characteristics, and explain how they differ from the tricyclic's in mechanism of action.
2. Describe the major drug interactions associated with SSRIs
3. List SNRI antidepressants & explain how they differ from SSRIs in terms of side effects & indications
4. Discuss the use of these agents in GAD & other psychiatric problems.
5. Discuss why an exceptionally long washout period is required after treatment with some antidepressants.

LECTURE 3
Topic: **ANTI DEPRESSENTS**
Lecture: **30 minutes**

Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to

1. List the primary indication for MAOIs in treating depression & their predicted drug interactions.
2. Enumerate the food must not be taken along with MAOs.
3. Describe contraindications & drug interactions
4. Discuss the indications, primary mechanism of action & side effects / toxicity for lithium in the treatment of mood disorders.
5. Discuss the possibility that mania may be precipitated when treating a bipolar depressive with an antidepressant
6. Discuss the importance of the washout period when switching from one drug to another in the treatment of mood disorders

Prototype drug
Tricyclic: amitriptyline,
SSRI"sfluoxetine citalopram, bupropion
MAO Inhibitors: phenelzine,
Mood stabilizer: Li: lithium.

PHARMACOLOGY OF ENDOCRINE GLANDS

LECTURE 1
Topic: **Thyroxin & Anti thyroid Drugs**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of this session, you should be able to:

1. Review the synthesis & release of thyroid hormone.
2. Review the physiological effects of Thyroxin.
3. Explain the therapeutic effects of thyroid hormones in the treatment of hypothyroidism
4. Discuss the use of T3 & T4 in hypothyroidism & adverse effects produced.

LECTURE 2

Topic: **Thyroxin & Anti thyroid Drugs**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome
At the end of this session, student should be able to

1. Point out the sites of action for inhibitors of thyroid hormone synthesis..
2. Explain the therapeutic effects of anti-thyroid drugs in the treatment of hyperthyroidism.
3. Discuss the role of different isotopes of Iodine in diagnosis and treatment of different thyroid disorders.
4. Difference in pharmacokinetics, therapeutic uses and adverse effect profile of propylthiouracil and thionamides.
5. Adjunctive treatment of hyperthyroidism

Prototype drugs levothyroxine (T4), iodide, and methimazole

ENDOCRINE PANCREASE, DIABETES MELLITUS

LECTURE 1& 2
Topic: **ENDOCRINE PANCREASE, DIABETES MELLITUS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of this session, student should be able to tell:

1. Review the effects of insulin on liver, muscle and adipose tissue.
2. List the types of insulin preparations available, and their pharmacokinetics
3. Select insulin,/combination of insulin in type 1 and type 2 diabetics .
4. Treatment of diabetic ketoacidosis and hyperosmolar coma.
5. Treatment of hypoglycemic coma, & role of glucagon in this condition.

Drug list
Ultra Rapid, T-short Acting; Intermediate Acting,; Long Acting: Ultra-Long Acting

LECTURE 3
Topic: **Non-Insulin Ant diabetics**

Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to

1. List the goals of therapy for type 2 diabetes
2. Describe the clinical features of the insulin-resistance syndrome
3. List the prototypes of oral hypoglycemic agents and describe the mechanisms of action and toxicities of the major classes.
4. Describe the indications & contraindications and advantages & disadvantages of each class of oral hypoglycemic drug.

LECTURE 4 & 5
Topic: **Non-Insulin Anti diabetics**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to

1. List insulin sensitizers & mechanism of action of each of them
2. Tell the uses of metformin including off label
3. Dose limiting adverse effects of metformin, lactic acidosis & its management.
4. List miscellaneous anti diabetics including parenteral agent, mechanism of action & adverse effects of each
5. Discuss the drugs used in the management of patients with type 2 diabetes& select drug /drug combination for particular patients.

Prototype
Acarabose, Chloroporpamide, Glipizide, Metformin, Rosiglitazone, Rapaglinide, Pramlintide

FEMALE SEX HORMONES

LECTURE 1

Topic: **FEMALE SEX HORMONES**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of this session, you should be able to:

1. Review the physiological effects of female sex hormones
2. List the types of estrogens used therapeutically
3. Explain their therapeutic actions of estrogens alone and their adverse effects .
4. List the contraindications for estrogen therapy

Drug List: 17-Beta Estradiol, Diethylstilbestrol, Estrone, Estriol, Ethinyl Estradiol, Mestranol,

LECTURE 2
Topic: **FEMALE SEX HORMONES**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of this session, you should be able to:

1. Classify Progestin's
2. List the reasons for use of progestin
3. Discuss other uses for progestin and their adverse effects
4. Discuss hormonal replacement therapy.
5. Describe the most common progestin's used in contraception.

Drug List
Hydroxyprogesterone, Medroxyprogesterone, Norethindrone, Levonorgestrel, Mifepristone, Fina steride, Testosterone Cypionate, Danazol, Stanozolol, fluoxymesterone

HORMONAL CONTRACEPTIVES

LECTURE 1
Topic: **HORMONAL CONTRACEPTIVES**
Lecture: **30 minutes**

Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

By the end of this session, you should be able to:

1. Describe the mechanisms of action of hormonal contraception Explain how oral contraceptives work.
2. Classify mixed hormonal contraceptives.
3. Discuss the adverse effects of oral & parental contraceptives.
4. List indications of advantages and disadvantages of progestin-only contraception.
5. Explain the use of day after contraceptive.
6. Explain the contraindications of combined oral contraceptives
7. What are the mild, moderate & serious adverse effects of Ethinyl Estradiol. Norethindrone, Levonorgestrel, Medroxyprogesterone
8. Define SERM& name important SERMS. Anti-estrogens ,and ovulation inducing agents
9. What there clinical uses adverse effects and contraindications.
10. Recognize the therapeutic uses for anti-estrogens.

Prototype
SERMS: Clomiphene, Tamoxifen, Raloxifene,

MALE SEX HORMONE

LECTURE 1
Topic: **MALE SEX HORMONE**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to tell

1. Classify androgens & anabolic steroids.
2. Discuss the use of androgens for hormonal replacement therapy.
3. List the use and misuse of anabolic steroids.
4. Recognize the side effects of androgens.
5. Recognize the clinical uses of anti-androgens.

GLUCOCORTICOIDS

LECTURE 1

Topic: **GLUCOCORTICOIDS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to tell:

1. Glucocorticoids & Pharmacology of the Adrenal Cortex
2. Describe the physiologic regulation of the thalamic-pituitary adrenal axis.
3. List the natural and synthetic adrenocortical steroids, their actions, and adverse effects.
4. Describe the clinical use of glucocorticoids in asthma, Addison's disease, Cushing's syndrome.
5. Explain the major clinical indications of agents that affect the glucocorticoid pathway.
6. Explain the adverse effects of drugs that affect the glucocorticoid pathway.
7. Explain the adverse effects of drugs that affect the mineralocorticoid pathway.
8. Explain what can happen if chronic treatment with glucocorticoids is abruptly ceased.

Drug List
Prednisone, Hydrocortisone, Dexamethasone, Triamcinolone, Fludrocortisone, Methyl prednisone, Mifepristone (RU-486), Metyrapone, Antihistamines & Histamine

LECTURE 2

Topic: **GLUCOCORTICOIDS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to tell:

1. Explain the difference between H1 and H2 receptors.
2. Describe the physiologic/pathophysiologic functions of histamine.

3. Explain the applications of H1 antihistamines in allergy, common cold, local anesthetics, motion sickness, migraine headache, and as anti-emetics.
4. Describe the applications of H2 antihistamines in duodenal ulcers, gastric ulcers, reflux esophagitis & as antacids.
5. Describe the pharmacokinetic properties, and side effects of H1 and H2 antagonists.

Drug List
H1 antagonists: bromopheniramine, chlorpheniramine, diphenhydramine, fexofenadine, loratidine, hydroxyzine**.**
H2 blockers: cimetidine, famotidine, nizatidine, ranitidine.
Anti-degranulation drugs: Cromolyn sodium, nedocromil sodium.
Histamine, bedazzle.

EICOSANOIDS

LECTURE 1
Topic: **EICOSANOIDS**
Lecture: **30 minutes**
Interactive Session: **15 minutes**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Student feedback form
Learning outcome
At the end of this session, student should be able to tell:

1. Explain what eicosanoids are, which are the key enzymes in the overall eiccosanoid pathway, what drugs affect each enzyme and the rate-limiting step.
2. Explain the termination of action of eicosanoids.
3. Explain what COX1 and COX2 are; explain their physiologic and pathophysiologic significance.
4. Explain what lipoxygenase products are & how they are formed.
5. Describe the role of eicosanoids in: a) inflammation, b) pain & c) fever.
6. Explain the meaning of "aspirin trials" and the theory supporting these trails.
7. Describe the lipoxygenase pathway of arachidonic acid metabolism & explain how the biologic actions of these products differ from each other.
8. Explain what PAF is.
9. Explain what roles are played by PAF.
10. Describe the role of omega-3 (fish oil) and omega-6 polyunsaturated fatty acids (arachidonic acid) in the formation of lipid mediators.

Drug list : Selective COX 2 Inhibitors: celecoxib (Celebrex ®), rofecoxib (Vioxx ®)
Nonselective COX inhibitor: aspirin
Leukotriene Inhibitors: montelukast, zafirlukast, zileuton
**Vioxx is not commercially available. It is mentioned for historical context only.

Clinical Pharmacology I: NSAIDs, Acetaminophen, Steroids (McNamara)

LECTURE 1

Topic:	**NSAIDs, Acetaminophen, Steroids (McNamara)**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes
Student feedback form
Learning outcome

At the end of this session, student should be able to tell:

1. Describe the common pharmacological effects of NSAIDs.
2. List the common adverse effects of NSAIDs.
3. Explain the special properties of aspirin.
4. Explain the basis for aspirin resistance & aspirin allergy.
5. Describe the dose-dependent mechanisms for, & symptoms of, aspirin toxicity.
6. Explain the basis for COX-2 inhibitor toxicity.
7. Explain the therapeutic use of prostaglandins and prostaglandin analogs.
8. Explain the use of lipoxygenase inhibitors and leukotriene antagonists in the treatment of asthma.
9. Explain the mechanism of action of acetaminophen and describe the symptoms of acetaminophen toxicity & its treatment.

Drug List:
Selective Cox-2 Inhibitor (NSAID): celecoxib (Celebrex ®)
Nonselective Cox Inhibitors (NSAIDs): aspirin, ibuprofen, naproxen, nabumetone & diclofenac.
Analgesic & Antipyretic: acetaminophen [Rx: N-acetyl cysteine]
Glucocorticoids: Beclomethasone, dexamethasone

Clinical Pharmacology II: NSAIDs, DMARDs, Rx Arthritis & Gout

LECTURE 1

Topic:	**NSAIDs, Acetaminophen, Steroids (McNamara)**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Student feedback form

Learning outcome

At the end of this session, student should be able to tell:

1. Explain the difference in the mechanism of action of steroids vs. NSAIDs.
2. Explain the mechanism of action of Disease Modifying Drugs.
3. Explain the synthesis & excretion of uric acid.
4. Explain the etiology of acute gouty arthritis & acute gouty flare-up.
5. Explain the rationale for the treatment of acute gouty arthritis & acute gouty flare-up.
6. Explain the relationship between Reye's syndrome & aspirin.

Drug List: Disease-Modifying Anti rheumatic Drugs (DMARDs): gold salts, azathioprine, Chloroquine, penicillamine, methotrexate, sulfasalazine
TNF-alpha blocking Anti bodies: adalimunab, infliximab, etanercept;
Rx of Gout: colchicine, allopurinol, probenecid, sulfinpyrazone, pegloticase.

Glucocorticoids & Pharmacology of the Adrenal Cortex - JiTT Session (Beckman)

LECTURE 1

Topic:	**Glucocorticoids & Pharmacology of the Adrenal Cortex**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Student feedback form

Learning outcome

At the end of this session, student should be able to tell:

1. Describe the physiologic regulation of the hypothalamic-pituitary adrenal axis.
2. List the natural and synthetic adrenocortical steroids, their actions, and adverse effects.
3. Describe the clinical use of glucocorticoids in asthma, Addison's disease, Cushing's syndrome.
4. Explain the major clinical indications of agents that affect the glucocorticoid pathway.
5. Explain the adverse effects of drugs that affect the glucocorticoid pathway.
6. Explain the adverse effects of drugs that affect the mineralocorticoid pathway.
7. Explain what can happen if chronic treatment with glucocorticoids is abruptly ceased.

Drug List: prednisone, hydrocortisone, dexamethasone, triamcinolone, fludrocortisone, Methyl prednisone, mifepristone (RU-486), Metyrapone

Clinical Correlations - Drug Responses in Children, Females and the Elderly

LECTURE 1

Topic:	**Drug Responses in Children, Females and the Elderly**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes**
No. of slides:	**12-15**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Student feedback form

Learning outcome

At the end of this session, student should be able to tell:

1. Explain the age-related changes in absorption, distribution and clearance of drugs (pharmacokinetics).
2. Explain the age-related changes in drug responses (pharmacodynamics).
3. Explain the influence of hormonal changes in females (pre-menopause and post-menopause) with regard to drug responses.
4. Give examples of special therapeutic problems and potential adverse drug reactions in females, children and the elderly.

Drug list

Diazepam, oxazepam, lorazepam, warfarin, cimetidine, chloramphenicol, sulfonamides, ceftriaxo ne, tetracyclines, thalidomide, zidovudine, metronidazole

DEPARTMENT OF ORTHOPAEDICS SURGERY
3rd YEAR TEACHING SCHEDULE

1. ORTHOPAEDIC INTRODUCTIONS
2. BIOLOGY OF BONE REPAIR
3. OPEN FRACTURES MANAGEMENT
4. SPRENGAL SHOULDER
5. COMMON PEDIATRIC FRACTURES
6. FRACTURES AROUND ELBOW & CLASSIFICATION FRACTURE LATERAL CONDYLE HUMERUS
7. GENU VALGUM
8. HALLUX VALGUS
9. OSTEOARTHRITIS & ITS NON- SURGICAL TREATMENT
10. FRACTURES OF NECK OF FEMUR
11. ACUTE TRAUMATIC LESIONS OF KNEE LIGAMENTS
12. FRACTURES OF DISTAL RADIUS
13. BONE FORMING BENIGN TUMORS
14. LIMB LENGTH DISCREPANCY

Topic: **Biology of Bone repair**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Number of slides:
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome:
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Define Types of bone; lamellar & non-lamellar bone
b. Explain Bone composition
c. Recall Mechanism of bone formation; Intramembranous, endochondral
d. Blood supply
e. Stages of fracture healing; Inflammation, repair, remodeling
f. Mechanisms of bone healing; direct & indirect
g. Direct bone healing
h. Indirect bone healing
i. Regulators of bone healing
j. Growth factors
k. Bone morphogenetic proteins
l. Cytokines
m. Hormones
n. Factors that decrease fracture healing
o. Types of EM devices
p. Summary

Topic: **Common pediatric fractures**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **62**
Interactive portion: **25%**
Assessment:
Teacher:
Assistant Prof. / Senior Registrar/Consultant
Duration of lecture: **One hour**

Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Define Introduction
b. Explain Relevance
c. Recall Anatomy of growing bone
d. Injury pattern in growing bones
e. Physical injuries
f. Salter-Harris classification
g. It's good to be young
h. Common fractures
i. Supracondylar fractures
j. Clavicle fractures
k. Tibial fractures
l. Toddlers fracture
m. Fractures of abuse
n. Conclusions
o.

Topic: **Distal humerus fractures**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides:
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Define Introduction
b. Explain Distal humerus fractures
c. Recall Type of Fractures
d. Classification
e. Treatment options
f. Indications for operative intervention
g. Complications
h. Follow-up

Topic: **Fractures of distal radius**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **41**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Introduction
b. Ligaments
c. Biomechanics of distal radius
d. Types of fracture
e. Classifications
f. Colles Fracture
g. Smith's fracture
h. Barton's fracture
i. Chauffeurs fracture
j. Treatment options
k. Indications for operative intervention
l. Complications
m. Follow-up

Topic: **Fractures of neck of femur**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **77**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**

Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Define Introduction
b. Explain Classifications
c. Recall Historical background
d. Vascular anatomy
e. Body & Griffin classification
f. Inter-Trochanteric Fx
g. DHS
h. Buttress plate
i. Gama Nail
j. Intramedullary nailing
k. Intra-capsular fractures NOF
l. Garden classification
m. Treatment options
n. Total Hip Replacement
o. AVN & non-union
p. Conclusion

Topic: **Fractures of Olecranon**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **35**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Define Introduction
b. Explain Anatomy
c. Recall Mechanism of injury; Direct & Indirect
d. Clinical presentation
e. Imaging & diagnostic studies
f. Classifications
g. Schatzker Classification

h. Mayo Classification
i. Treatment options; operative & non-operative
j. Surgical options
k. Tension band wiring
l. Medullary fixation
m. Plate & screw fixation
n. Excision of a proximal fragment
o. Olecranon fracture dislocations
p. Complications

Topic: **Fractures of radial head**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **31**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a) Define Introduction
b) Explain Anatomy of radial head
c) Explain Mechanism of fracture
d) Mason fracture classification
e) Non-operative treatment
f) ORIF
g) Excision of radial head; Excision principles
h) Radial head replacement
i) Metallic implants

Topic: **Genu Valgum**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **58**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Recall Definition
b. Explain Incidence
c. Recall Normal development
d. Explain Causes
e. Pathophsiology
f. Presentation
g. Examination; gait pattern, Q-angle
h. Investigations
i. Radiology
j. Management; conservative & surgical
k. Goal of surgery
l. Conclusion

Topic: **Hallux valgus**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **58**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Recall Definition
b. Recall Incidence
c. Explain Normal development
d. Explain Causes
e. Explain Pathophsiology
f. Presentation
g. Able to perform Examination
h. Investigations
i. Radiology
j. Management; conservative & surgical
k. Goal of surgery
l. Conclusion

Topic: **Limb length discrepancy (LLD)**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **34**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Introduction
b. Causes
c. Clinical assessment
d. Treatment; conservative & operative
e. Epiphysiodesis
f. Limb shortening
g. Disadvantages of shortening
h. Limb lengthening
i. Trans-iliac lengthening
j. After treatment
k. Complications
l. Conclusion

Topic: **Management of open fractures**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **104**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Introduction
b. Definition
c. Types of injury
d. Deaths; immediate, early, late
e. Accident & emergency management
f. ATLS
g. Circulation (C)
h. Airway (A)
i. Breathing (B)
j. Deformity (D)
k. Exposure (E)
l. Secondary survey
m. Classification of open fractures
n. Definitive wound management
o. External fixator
p. BALTI treatment
q. Advantages
r. Outcome
s. Skin grafting
t. Conclusion

Topic: **Orthopedic Introduction**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **30**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Introduction
b. New horizons
c. Earthquake tragedy
d. Introducing the department
e. Objectives of undergraduate training

Topic: **Osteoarthritis & its non-surgical treatment**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **44**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form
Learning outcome: *At the end of lecture student should be able to reproduce*

a. Definition
b. Prevalence & epidemiology
c. Risk factors
d. Classification
e. Anatomy
f. Pathophysiology
g. Clinical Presentation; signs & symptoms

h. Examination
i. Radiological signs
j. Treatment options
k. Non-operative treatment
l. Rehabilitation
m. Conclusion

Topic: **Sprengel shoulder**
Mode of teaching: **Lecture**
Class: **3rd year MBBS**
Learning outcome: **Student should be able to:**
Number of slides: **40**
Interactive portion: **25%**
Assessment:
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **One hour**
Lecture **45 minutes**
Interactive **15 minutes**
Student feedback form

Learning outcome: *At the end of lecture student should be able to reproduce*

a. Introduction
b. Definition
c. Anatomy
d. Etiology
e. Frequency
f. Pathophysiology
g. Clinical presentation
h. Associated malformations
i. Associated syndromes
j. Gavendish grades
k. Radiographic classification
l. Imaging studies
m. Medical therapy
n. Surgical therapy
o. Woodward procedure
p. Follow-up
q. Conclusion

Topic: **Principles of Anesthesia**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2 Quiz about equipment identification)**
No. of Slides: **20-25**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**

Learning outcome: *At the end of lecture student should be able to reproduce*

a. Definition of anesthesia and why anesthesia is important
b. Mechanism and stages of anesthesia
c. Planning, pre-anesthesia assessment and fasting
d. Analgesia and monitoring

Topic: **Types of Anesthesia**
Lecture: **30 minutes**
Interactive Session: **15 minutes (2 Quiz about equipment identification)**
No. of Slides: **20-25**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: **45 minutes**
Learning outcome *At the end of lecture student should be able to reproduce*

a. Enlist different types of anesthesia
b. Drugs used and their mechanism of action
c. Advantages and disadvantages of different types of anesthesia
d. Sedation and anesthesia

3RD YEAR LEARNING OBJECTIVES of GENERAL SURGERY

TOPIC: **PAIN CONTROL AND POST-OPERATIVE ANALGESIA**

Lecture: **30 minutes**

Interactive session: **15 minutes**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45min

Learning Outcome: *At the end of lecture student should be able to reproduce*

a. Pathophysiology of pain
b. Types of pain
c. The analgesia ladder
d. Acute and chronic pain management
e. Principle of Post-operative analgesia

TOPIC: **DEALING WITH CRITICAL SITUATIONS: PATIENTS WITH GAS GANGRENE AND TETANUS**

Lecture: **30 minutes**

Interactive session: **15 minutes**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45min

Learning outcome: *At the end of lecture student should be able to reproduce*

a. Pathophysiology
b. Clinical presentation and Diagnosis
c. Management
d. Prevention

TOPIC: **PARASITIC INFECTIONS OF SURGICAL IMPORTANCE**

Lecture: **30 minutes**

Interactive session: **15 minutes**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45min

LEARNING OUTCOME:

At the end of lecture student should be able to reproduce

a. Introduction of surgically important parasites
b. Diagnostic criteria and management
c. Emergency presentations of parasitic infections
d. Importance of multidisciplinary approach

Topic: **Management of Wounds**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 minutes**

Learning Outcome: *At the end of lecture student should be able to reproduce*

a. How to manage wounds of different types of different structures and at different sites.
b. Aspects of disordered healing which lead to chronic wounds.
c. The variety of scars and their treatment

Topic **Dealing with critical situation: Poly Trauma with airway difficultly & circulatory instability: ABC of Emergency**.

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 minutes**

Learning Outcome:

At the end of lecture student should be able to reproduce

a. Approach to a patient with multiple injuries ABCDE. Primary survey
b. How to access airway obstruction and various methods of securing airway.
c. Care of a patient with suspected cervical spine injuries.

Topic: **Cardiac Arrest**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 minutes**

Learning Outcome: *At the end of lecture student should be able to reproduce*

a. How to approach a patient with sudden loss of consciousness.
b. How to access cardiac arrest
c. To know steps of basic life support and CPR.

Topic: **Thromboembolic Phenomenon & Amputation**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 minutes**

Learning Objectives: At the end of lecture you will be able to know

a. What is thromboembolism?
b. Causes / Physiology of Hemostasis
c. Risk factors for Thromboembolism disease.
d. How to diagnose thromboembolism both clinically & with investigations.
e. Prophylaxis of thromboembolism.
f. Treatment of thromboembolism
g. Amputation
h. Various types of lower limb amputation
i. Complications

Topic: **Lymphadenopathy**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 minutes**

Learning Objectives: At the end of lecture you will be able to know

a. Anatomy physiology of lymphatic system.
b. Pathophysiology of Lymphadenopathy
c. Etiology of Lymphadenopathy
d. History / Clinical examination
e. Investigations
f. Treatment

Topic:	**Principles of Organ Transplantation & its implications**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/Case history)**
No. of slides:	**20-25**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 minutes**

Learning Objectives: At the end of lecture you will be able to know

a. To know immunological basis of allograft rejection.
b. To appreciate principles of immunosuppressive therapy.
c. To be aware of the side effects of non-specific immunosuppressive
d. To be familiar with the major issues concerning organ donation.
e. To appreciate main indications of organ transplant to know the surgical principles of organ transplantation.
f. To know the likely outcomes after transplant.
g. To be aware of potential future developments in transplantation.

Topic:	**Skin Grafting**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/Case history)**
No. of slides:	**20-25**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 minutes**

Learning Objective: At the end of the lecture we will be able to know

a. Anatomy of skin
b. To appreciate anatomy of skin grafts
c. To know how graft sum
d. To appreciate various types of skin grafts
e. To know procedure of skin grafting.
f. To know its indications
g. To appreciate complications of skin grafting.

Topic:	**Blunt Abdomen Trauma**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/Case history)**
No. of slides:	**20-25**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 minute**

Learning Objective: At the end of lecture we will be able to know.

a. Anatomy & Physiology of abdomen
b. Pathophysiology of abdominal injury.
c. Approach to abdominal trauma patient.
d. History & examinations of abdominal trauma patient able to know investigations for Blunt Trauma abdomen.
e. Management of individual organ injury.
f. Damage control surgery

TOPIC:	**MANAGEMENT OF BURNS**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/Case history)**
No. of slides:	**20-25**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes.**

At the end of the session the 3rd year students should be able to:-

a. Asses area and depth of burns
b. Understand methods of calculating rate and quantity of fluids given
c. Differentiate between chemical and electrical burns
d. Do initial management

TOPIC: **PERIPHERAL NERVE INJURIES**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: **45 minutes.**

At the end of the session the 3rd year students should be able to:-

a. Understand mechanism of peripheral nerve injuries
b. Clinically asses(tests) the nerve injuries
c. Asses the vascular status of limb involved
d. Do initial management

Topic: **Chest Trauma**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: **45 minutes.**

At the end of the session the 3rd year students should be able to understand:-

a. Surgical anatomy of thorax
b. Types and sequel of chest trauma
c. Pneumothorax, tension pneumothorax, haemothorax
d. Management of chest trauma .

Topic: **Lymphatic disorders**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: **45 minutes.**

At the end of the session the 3rd year students should be able to understand:-

The student should be able to:

To Reproduce:

- The main functions of the lymphatic system

- The development of the lymphatic system
- The various causes of limb swelling
- The etiology, clinical features, investigations and treatment of lymphedema

Topic: **vascular affliction & limb ischemia**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes.

At the end of the session the 3rd year students should be able to understand:-

1. Arterial supply of limbs
2. Types of limb ischemia.
3. Diagnosis and management of limb ischemia,
4. Complications of limb ischemia.

LECTURES OF DR ASIF ALVI

Topic: SEPSIS, ASEPSIS, SURGICAL WOUND INFECTION AND ABSCESSES

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Learning Objectives : **At the end of this lecture you will be able to know:**

To understand

The factors that determine whether a wound will become infected

The classification of source of infection and their severity

The indications and choice of prophylactic antibiotics

The characteristics of the common surgical pathogens and their sensitivity

To Learn

The management of abscesses

To appreciate

The importance of aseptic and antiseptic techniques and delayed primary and secondary closure in contaminated wounds

To know

The definition of infection, particularly at the surgical sites

Precautions require avoiding transmission of contractible diseases amongst patients.

Topic:	**Common Benign and Malignant Skin Lesions**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Lecture:	**30 minutes**
Interactive Session:	**15 minutes (2MCQs/Case history)**
No. of slides:	**20-25**
Learning Objectives :	**At the end of this lecture you will be able to know**

To understand

The structure and functional properties of skin

To know

The classification and general management of benign skin tumors, malignant skin tumors and vascular skin lesions

The common cutaneous manifestations of generalized diseases that are seen in surgical practice.

Topic: **venous disease, DVT, varicose vein**

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/Case history)**

No. of slides: **20-25**

Learning Objectives : **At the end of this lecture you will be able to know**

Venous anatomy and pathophysiology of venous return

The pathology of venous disease

The clinical significance of varicose veins, deep venous thrombosis

Venous insufficiency and venous ulceration

Topic: Physiological response to trauma & homeostasis

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

The student should be able to:
To gain an understanding of:

- The importance of time in trauma management
- How to assess a trauma problem
- How to respond to a trauma problem
- The value of planning

Topic:	Patient in Hypovolemic & blood transfusion & their implications
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives :	**At the end of this lecture you will be able to know**

To understand

- The pathophysiology of shock and ischemia– reperfusion injury
- The different patterns of shock and the principles and priorities of resuscitation
- Appropriate monitoring and end points of resuscitation
- Use of blood and blood products, the benefits and risks of blood transfusion

Topic:	**Nutrition and fluid therapy**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives :	**At the end of this lecture you will be able to know**

To understand

The student should be able to:

To Reproduce:

- The causes and consequences of malnutrition in the surgical patient
- Fluid and electrolyte requirements in the pre- and postoperative patient

- The nutritional requirements of surgical patients and the nutritional consequences of intestinal resection
- The different methods of providing nutritional support and their complications

Topic: (Tension Pneumothorax, Cardiac tamponed, Fracture Cervical Spine)

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

The student should be able to:

To Reproduce:

- Tension Pneumothorax,
- Cardiac tamponed,
- Fracture Cervical Spine)

Topic: **Fluid and electrolyte balance**

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

The student should be able to:

- To appreciate the critical role of fluid balance in surgery
- To understand acid base balance in relation to surgery
- To manage blood loss and restoration of blood volume

Topic: Nutrition of Surgical Patients.

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

The student should be able to:

To Reproduce:

- The causes and consequences of malnutrition in the surgical patient
- Fluid and electrolyte requirements in the pre- and postoperative patient
- The nutritional requirements of surgical patients and the nutritional consequences of Intestinal resection
- The different methods of providing nutritional support and their complications

Topic:	Path physiology & Management of Shock
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives :	**At the end of this lecture you will be able to know**

To understand

The student should be able to:

To Reproduce:

- The pathophysiology of shock and ischemia– reperfusion injury
- The different patterns of shock and the principles and priorities of resuscitation
- Appropriate monitoring and end points of resuscitation
- Use of blood and blood products, the benefits and risks of blood transfusion

Topic:	Accident & Warfare Injuries: Management of severely injured Patient
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives :	**At the end of this lecture you will be able to know**

To understand

The student should be able to:

- Know the concept of tri **modal** pattern of death after disaster
- Know concept and methodology behind triage after accident disaster
- Identify correct sequence of priorities for assessment of a multiple injured patients
- Apply the principle outlined in the primary and secondary evaluation surveys to the assessment of a multiple injured patients
- Apply guidelines and techniques in the initial resuscitation and definitive care phases of treatment of a multiple injured patients
- Identify the pitfalls associated with the initial assessment and management of an injured patient and steps required to minimize their impact

Topic:	Wound Healing & Repair
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives :	**At the end of this lecture you will be able to know**

To understand

The student should be able to:

- phases of wound repair
- types of wound healing
- factors effecting wound healing
- classification of wounds
- common types of excessive wounds healing (keloid and hypertrophic scars)

Topic:	Acid &Base Balance Ventilation and blood gases
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

The student should be able to:

- Normal distribution of fluid and electrolyte in human body
- Different steps of electrolyte imbalance
- Normal acid base balance of human body
- Different types of alkalosis and acidosis
- Basics of artificial ventilation indications and different modes of ventilators and associated changes in blood gases.

Topic: Management of Critically ill Patient: Monitoring & support

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

The student should be able to:

- Identification of critically ill patients
- Management of sepsis and septic shock
- Management of SIRS (systemic inflammatory response syndrome) and MODS (multiple organ dysfunction syndrome)

Topic: Benign and malignant tumors

Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives :	**At the end of this lecture you will be able to know**

To understand

The student should be able to:

- Malignant transformation
- Gompertzian growth
- Clinical implications of Gompertzian Growth
- Inherited syndromes associated with cancer
- Inherited syndromes
- Environmental Causes of Cancer
- Screening
- Members of multi professional team
- Principles of Cancer Surgery
- Nonsurgical management of Cancer
- Cancers that may be cured without Surgical Excision
- Principles of combined therapy
- Chemotherapeutic agents
- End of life issues
- Palliative and supportive care

Topic: Investigation and treatment of infection

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

The student should be able to:

- Koch's postulates
- Causes of reduced host resistance
- Risk factors for wound infection
- Superficial surgical site infections
- Deep surgical site infections
- Major wound infections
- Sources of infection
- Abscess Cellulitis and lymphangitis
- Definitions SIRS ,MODS/ Sepsis syndrome, Sepsis, MSOF
- Gas gangrene
- Tetanus
- Synergistic spreading gangrene
- Organisms encountered in different surgeries
- Antibiotic Prophylaxis
- Principles for using antibiotics
- Involvement of surgeons with HIV+ patients

Topic: Postoperative Chest Complications

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

- The student should be able to:

- The pathophysiology and Importance of postoperative atelectasis and Pneumonia .
- The Importance of preoperative Respiratory function tests and assessment before major surgical procedures.
- The Importance of early Mobilization and Physiotherapy in the postoperative period
- The role of bronchodilators , empirical antibiotic therapy and respiratory physiotherapy in the treatment of postoperative chest infections
- Surgical Intervention for postoperative chest infections
- Role of chest intubation for pneumothorax, Para pneumonic effusions and empyema.

Topic: Viruses: Hepatitis

Mode of Teaching: **Lecture**

Class: **3rd year**

No of Slides: **12-16**

Interactive portion: **30%**

Assessment **MCQs**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of Lecture: **45 min.**

Lecture **30 min**

Interactive **15 min**

Learning Objectives : **At the end of this lecture you will be able to know**

To understand

- The student should be able to:

The risks of hepatitis and HIV to surgeons and medical staff during surgery

2. The prevalence of HIV and hepatitis viruses in Pakistani population and preoperative investigations of surgical importance in such patients

To be aware of

1. The precautions to prevent transmission Hepatitis and HIV to surgeons and paramedical staff and the concept of barrier precaution.
2. The protocols and workup in case of accidental exposure during surgery

To Learn

The Treatment and vaccination schedule for HBV infections

DEPARTMENT OF UROLOGY

UROLOGY

Topic:	**Urological Symptoms**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-16**
Interactive portion:	**30%**
Assessment	**3 MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**

Learning Objectives : At the end of this lecture you will be able to know:

The student should be able to:

Reproduce

a. Define Urology
b. Primary symptoms in Urology
c. Secondary symptoms in Urology
d. Associated systemic manifestations
e. Presentation of Children with Urological Disorders
f. Some Objective Symptoms of Presentation Specific to Uro-genital Disorders.

Topic:	**Investigations for Urological Disorders.**
Mode of Teaching:	**Lecture**
Class	**3rd year**
No of Slides:	**22-25**
Interactive portion:	**30%**
Assessment:	**3 MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**

Learning Objectives At the end of this lecture we will be able to know:

: The student should be able to:

Reproduce

a. What are various base line investigations & Their role not only in helping the diagnosis but also in evaluating the Co-morbid which may change the outcome or increase the morbidity / mortality of the patient
b. The role of specific investigations to confirm the diagnosis or to rule out the Differential Diagnosis
c. The indications of these specific investigations
d. Above all avoidance of un-necessary ordering of investigations for cost effectiveness.

Topic:	**Haematuria**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-15**
Interactive portion:	**30%**
Assessment:	**3 MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**

Learning Objectives : At the end of this lecture we will be able to know that:

The student should be able to:

Reproduce

a. Definition of Haematuria
b. How we Classify haematuria
c. Assessment of site of haematuria
d. Various causes of haematuria
e. Management of haematuria

Topic:	**Retention of Urine**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**10-15**
Interactive portion:	**30%**
Assessment:	**3 MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives :	At the end of this lecture we will be able to know that:

The student should be able to:

Reproduce

a. Definition
b. Differentiation between acute versus chronic retention.
c. Management of retention in ER
d. Investigations for retentions
e. Definitive management

Topic:	**Non- specific Urinary Tract Infections**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**18-20**
Interactive portion:	**30%**
Assessment:	**3 MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives:	At the end of this lecture we will be able to know that:

The student should be able to:

Reproduce

a. Etiology of the urinary tract infections
b. Clinical features of upper & lower UTI.
c. Diagnosis & treatment of UTI
d. Complications of UTI

Topic:	**Specific Infections of Genitourinary Tract**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-15**
Interactive portion:	**30%**
Assessment:	**3 MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**
Learning Objectives:	At the end of this lecture we will be able to know that:

The student should be able to:

Reproduce

a. Types of specific infections.
b. Genitourinary tuberculosis
c. Pathogeneses and clinical findings
d. Diagnosis of GUTB
e. Management Of GUTB & its complications

Topic:	**Specific Infections of Genitourinary Tract**
Mode of Teaching:	**Lecture**
Class:	**3rd year**
No of Slides:	**12-15**
Interactive portion:	**30%**
Assessment:	**3 MCQs**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of Lecture:	**45 min.**
Lecture	**30 min**
Interactive	**15 min**

Learning Objectives : At the end of this lecture we will be able to know that:

The student should be able to:

Reproduce

a. Urinary Shistosomiasis
b. Endemic areas, clinical presentation & investigations required
c. Complications & treatment of Shistosomiasis
d. Prevention of Shistosomiasis

Topic:	**Lymphatic Disorders**
Lecture:	**08:00 am to 8:25 am**
Interactive session:	**8:25 am to 8:45 am.**
No. of slides:	**20 -25**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes.**

At the end of the session the 3rd year students should be able to understand:-

The student should be able to:

Reproduce

a. Surgical anatomy the lymphatic system
b. Common surgical problems of lymphatic system
c. Lymph edema –causes and management.

Topic:	**Vascular Afflictions and limb Ischemia.**
Lecture:	**08:00 am to 8:25 am**
Interactive session:	**8:25 am to 8:45 am.**
No. of slides:	**20 -25**
Teacher:	**Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture:	**45 minutes.**

At the end of the session the 3rd year students should be able to understand:-

The student should be able to:

Reproduce

a. Arterial supply of limbs
b. Types of limb ischemia.
c. Diagnosis and management of limb ischemia,
d. Complications of limb ischemia.

Forensic Medicine and Toxicology

Forensic Medicine
Unit I
Sub Unit 1:- Thanatology

Topic-Introduction
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Students should have comprehensive knowledge of the importance of Thanatology, should be able to define Somatic and Molecular Death and they can differentiate natural and un-natural deaths.
Skills
At the end of the session the students will be able to examine a case of death, confirmation of death and differentiate between natural and un-natural death and calculate time since death.
Teaching Learning Methodology - Lecture
Learning Objective Cognitive / Psycho motor
At the end of the session students should be able to:
1. Define Thanatology (C-1)
2. Describe the Forensic importance of Thanatology and its applications (C-1)

Topic-Diagnoses of Death
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Students should have comprehensive knowledge of the importance of Thanatology, should be able to define Somatic and Molecular Death and they can differentiate natural and un-natural deaths.
Skills
At the end of the session the students will be able to examine a case of death, confirmation of death and differentiate between natural and un-natural death and calculate time since death.
Teaching Learning Methodology - Visit to mortuary and Casualty department of teaching hospital
Learning Objective Cognitive / Psycho motor
At the end of session students should be able to:
1. Somatic and Molecular Death (C1)
2. Describe various modes of death (C1)

3. Signs of death (C1)
4. Differentiate between natural and un-natural death (C2)

Topic-Estimation of time since death

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Students should have comprehensive knowledge of the importance of Thanatology, should be able to define Somatic and Molecular Death and they can differentiate natural and un-natural deaths.
Skills
At the end of the session the students will be able to examine a case of death, confirmation of death and differentiate between natural and un-natural death and calculate time since death.
Teaching Learning Methodology - Visit to mortuary and Casualty department of teaching hospital
Learning Objective Cognitive / Psycho motor
At the end of session students should be able to:
1. Examine a dead body for Estimation of the time since death

Topic-Suicide (Prevalence Causes Stigma Laws Related to suicide)

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Students should have comprehensive knowledge of the importance of Thanatology, should be able to define Somatic and Molecular Death and they can differentiate natural and un-natural deaths.
Skills
At the end of the session the students will be able to examine a case of death, confirmation of death and differentiate between natural and un-natural death and calculate time since death.
Learning Objective Cognitive / Psycho motor
At the end of session students should be able to:
1. Define suicide
2. Describe various causes and laws related to such cases. (C1 and C2)

Forensic Medicine
Unit I
Sub-Unit 2:- Autopsy

Topic-Introduction
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Student should be able to enlist types, objectives, rules, techniques and describe procedure for postmortem examination and exhumation.
Teaching Learning Methodology - Lecture
Learning Objective Cognitive / Psycho motor
At the end of the session students should be able to:

1. Define Autopsy
2. Objects of Medico legal autopsy (C1)
3. Precaution for medico legal autopsy. (C2)

Topic- Essentials and arrangements in Autopsy suit Authorization Identification History of a case Examination Verification of injury noted by Police Notes
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Student should be able to enlist types, objectives, rules, techniques and describe procedure for postmortem examination and exhumation.
Skills
At the end of session student will be able to:
Identify the dead body, have a proper history of a case and can examine the dead body with the verification of injuries noted by Police under supervision of Forensic Expert.
Teaching Learning Methodology - Lectures/ SGDs and visit to autopsy unit (mortuary)
Learning Objective Cognitive / Psycho motor
At the end of session students should be able to:

1. List different types of autopsies.
2. (C1) Describe rules
3. Techniques
4. Objectives
5. Essentials
6. Arrangements of autopsies suit (C2).

Topic-Autopsy Objectives, rules and techniques

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Student should be able to enlist types, objectives, rules, techniques and describe procedure for postmortem examination and exhumation.
Skills
At the end of session student will be able to:
Identify the dead body, have a proper history of a case and can examine the dead body with the verification of injuries noted by Police under supervision of Forensic Expert.
Teaching Learning Methodology - - Lectures/ SGDs and visit to autopsy unit (mortuary)
Learning Objective Cognitive / Psycho motor
At the end of session students should be able to:

1. List different types of autopsies.
2. (C1) Describe rules
3. Techniques
4. Objectives
5. Essentials
6. Arrangements of autopsies suit (C2).

Topic-Exhumation Procedures Value and Limitations

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Student should be able to enlist types, objectives, rules, techniques and describe procedure for postmortem examination and exhumation.
Skills

1. To determine the cause of death when foul play is suspected.,
2. Should be able to correlate the results of laboratory findings with the un-natural deaths for determination of cause of death.

Teaching Learning Methodology – Demonstration at the site of Graveyard
Learning Objective Cognitive / Psycho motor
At the end of session students should be able to:

1. Describe procedures
2. Value and limitations of exhumation.

Topic – Biological examination
Blood
semen
hairs
saliva
urine
Faecal mater
Milk
Disputed paternity and maternity
Medico legal application s of blood group

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Student should be able describe the:
1. Forensic importance of Biological specimens (Blood, Semen, Saliva etc.)
2. The method of their collection, preservation, dispatch and the common laboratory tests performed

Skills
1. To determine the cause of death when foul play is suspected.,
2. Should be able to correlate the results of laboratory findings with the un-natural deaths for determination of cause of death.

Teaching Learning Methodology – Visit to the Chemical Examinations laboratory.
Learning Objective Cognitive / Psycho motor
At the end of session students should be able to:
1. Collect relevant samples for selection
2. Preservation
3. Labeling and dispatch of biological materials for laboratory examination

Forensic Medicine
Unit I
Sub-Unit 3:- Personal Identity

Topic-Introduction

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Learning Objective Cognitive / Psycho motor
At the end of the session students should be able to:

1. Define personal identity of living or dead for civil and criminal investigations.
2. Complete and absolute and partial identification.

Topic-Parameters of identification

- age
- Sex
-

Other factors

- Race and communal characters
- Dactylography
- Poroscopy
- Foot print
- Complexion
- Features
- Hairs
- Stature
- Deformities
- Tattoo marks
- Scars
- Occupational stigmata
- Anthropometry
- Superimposition
- Trace evidence factor

Knowledge
The student should be able to define and describe the parameters of personal identity
Skills
They can identify the living and dead for all the relevant objectives of identification
Teaching Learning Methodology - Lectures/SGDs/Demonstration in hospital(Mortuary, Casualty Department) /Practical Work
Learning Objective Cognitive / Psycho motor
At the end of the session students should be able to:

1. Describe the parameters of personal identity
2. Methods of identifying living
3. Dead
4. Decomposed mutilated and burnt bodies
5. Skeleton
6. Fragmentary remains using special techniques (Dentistry Radiology, Neutron Activation Analysis etc.)
7. Objective methods of identification (Osteometery, Dactyloscopy D.N.A technique, Super imposition photography etc.)

8. (C1, C2)

Topic- Examination of fragmentary remains
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Teaching Learning Methodology - SGDs at mortuary
Learning Objective Cognitive / Psycho motor
At the end of the session students should be able to:

1. Describe the parameters of personal identity
2. Methods of identifying living
3. Dead
4. Decomposed mutilated and burnt bodies
5. Skeleton
6. Fragmentary remains using special techniques (Dentistry Radiology, Neutron Activation Analysis etc.)
7. Objective methods of identification (Osteometery, Dactyloscopy D.N.A technique, Super imposition photography etc.)
8. (C1, C2)

Topic- Examination of teeth
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Teaching Learning Methodology - SGDs at mortuary
Learning Objective cognitive/ Psycho motor
At the end of the session students should be able to:

1. Describe the parameters of personal identity
2. Methods of identifying living
3. Dead
4. Decomposed mutilated and burnt bodies
5. Skeleton
6. Fragmentary remains using special techniques (Dentistry Radiology, Neutron Activation Analysis etc.)
7. Objective methods of identification (Osteometery, Dactyloscopy D.N.A technique, Super imposition photography etc.)

8. (C1, C2)

Topic- Role of radiology examination

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Teaching Learning Methodology - Tutorial x-rays

Learning Objective Cognitive/ Psycho motor

At the end of the session students should be able to:

1. Describe the parameters of personal identity
2. Methods of identifying living
3. Dead
4. Decomposed mutilated and burnt bodies
5. Skeleton
6. Fragmentary remains using special techniques (Dentistry Radiology, Neutron Activation Analysis etc.)
7. Objective methods of identification (Osteometery, Dactyloscopy D.N.A technique, Super imposition photography etc.)
8. (C1, C2)

Topic- D.N.A finger printing

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Teaching Learning Methodology - Lecture and A.V

Learning Objective Cognitive/ Psycho motor

At the end of the session students should be able to:

1. Describe the parameters of personal identity
2. Methods of identifying living
3. Dead
4. Decomposed mutilated and burnt bodies
5. Skeleton
6. Fragmentary remains using special techniques (Dentistry Radiology, Neutron Activation Analysis etc.)
7. Objective methods of identification (Osteometery, Dactyloscopy D.N.A technique, Super imposition photography etc.)
8. (C1, C2)

Forensic Medicine
Unit I
Sub-Unit 4:- Laws Relating to doctors and legal procedures

Topic- Introduction
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Teaching Learning Methodology - SGDs
Learning Objective Cognitive/ Psycho motor
At the end of the session students should be able to:

1. Describe the importance of medical ethics and law.

Topic- Medical Ethics
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge

1. Define what constitutes medical negligence,
2. Be able to declare Brain death,
3. Using the highest ethical and biological principles for the decision, debate the pros
4. Cons of organ transplantation in each individual case.

Skills

1. Develop and defend a personal moral view on artificial insemination,
2. Therapeutic abortions,
3. Euthanasia,
4. Biomedical research etc. in keeping with the norms of society and highest ethical principles.

Teaching Learning Methodology - PBL
Learning Objective Cognitive/ Psycho motor
At the end of the session students should be able to:

1. Assess and act according to and within the framework of privileges and obligations of registered medical practitioner,
2. Maintain a Doctor-patient relationship in the context of the higher ethical standards,
3. Understand and refrain from any temptations to professional misconduct.

4. Guard professional secrets and privileged communication.
5. Maintain highest ethical principles in medical examination and when obtaining consent.

Topic- PMDC rules and regulation governing medical procedure

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

1. Define what constitutes medical negligence,
2. Be able to declare Brain death,
3. Using the highest ethical and biological principles for the decision, debate the pros
4. Cons of organ transplantation in each individual case.

Teaching Learning Methodology - Lectures

Learning Objective Cognitive/ Psycho motor

At the end of the session students should be able to:

1. Assess and act according to and within the framework of privileges and obligations of registered medical practitioner,
2. Maintain a Doctor-patient relationship in the context of the higher ethical standards,
3. Understand and refrain from any temptations to professional misconduct.
4. Guard professional secrets and privileged communication.
5. Maintain highest ethical principles in medical examination and when obtaining consent.

Topic- M.L importance of consent

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

1. Define what constitutes medical negligence,
2. Be able to declare Brain death,
3. Using the highest ethical and biological principles for the decision, debate the pros
4. Cons of organ transplantation in each individual case.

Teaching Learning Methodology - SGDs

Learning Objective Cognitive/ Psycho motor

At the end of the session students should be able to:

1. Assess and act according to and within the framework of privileges and obligations of registered medical practitioner,
2. Maintain a Doctor-patient relationship in the context of the higher ethical standards,
3. Understand and refrain from any temptations to professional misconduct.
4. Guard professional secrets and privileged communication.

5. Maintain highest ethical principles in medical examination and when obtaining consent.

Topic- Medical negligence
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
1. Define what constitutes medical negligence,
2. Be able to declare Brain death,
3. Using the highest ethical and biological principles for the decision, debate the pros
4. Cons of organ transplantation in each individual case.

Teaching Learning Methodology - SGDs
Learning Objective Cognitive/ Psycho motor
At the end of the session students should be able to:
1. Assess and act according to and within the framework of privileges and obligations of registered medical practitioner,
2. Maintain a Doctor-patient relationship in the context of the higher ethical standards,
3. Understand and refrain from any temptations to professional misconduct.
4. Guard professional secrets and privileged communication.
5. Maintain highest ethical principles in medical examination and when obtaining consent.

Topic- Confidentially and legal medical
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
1. Define what constitutes medical negligence,
2. Be able to declare Brain death,
3. Using the highest ethical and biological principles for the decision, debate the pros
4. Cons of organ transplantation in each individual case.

Teaching Learning Methodology - Lectures
Learning Objective Cognitive/ Psycho motor
At the end of the session students should be able to:
1. Assess and act according to and within the framework of privileges and obligations of registered medical practitioner,
2. Maintain a Doctor-patient relationship in the context of the higher ethical standards,

3. Understand and refrain from any temptations to professional misconduct.
4. Guard professional secrets and privileged communication.
5. Maintain highest ethical principles in medical examination and when obtaining consent.

Topic- Courts and legal procedures (Pakistan)
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
1. Define what constitutes medical negligence,
2. Be able to declare Brain death,
3. Using the highest ethical and biological principles for the decision, debate the pros
4. Cons of organ transplantation in each individual case.

Teaching Learning Methodology - Lectures
Learning Objective Cognitive/ Psycho motor
At the end of the session students should be able to:
1. Assess and act according to and within the framework of privileges and obligations of registered medical practitioner,
2. Maintain a Doctor-patient relationship in the context of the higher ethical standards,
3. Understand and refrain from any temptations to professional misconduct.
4. Guard professional secrets and privileged communication.
5. Maintain highest ethical principles in medical examination and when obtaining consent.

Forensic Medicine
Unit II (Trauma)
Sub Unit 1:- Mechanical Injuries

Sub- Topics - Introduction
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Teaching Learning Methodology
Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs
Learning Objective Cognitive/ Psycho motor
At the end of session student will be able to:
Define the mechanical injuries with their medico legal importance. (C1).

Sub- Topics - Mechanism of injury
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes
Knowledge
Student should be able to classify various mechanical and firearm injuries and be able to device strategies for relevant medico legal proceedings. They will be able to describe the etiological details of regional injuries and their implications.
Skills
The will be able to examine an injured person and correlate the mechanism and types of injury. They can distinguish between ante and postmortem wounds. They can recognize the character of wound independently.
Teaching Learning Methodology
Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs
Learning Objective Cognitive/ Psycho motor
Student should be able to:
1. Describe the mechanism of wound production,
2. classification of wound
3. Wounds produced by conventional weapons and their medico legal aspects. (C1)

Sub- Topics - Types of injuries (General Aspects)

- Abrasion
- Bruises
- Lacerations
- Incised wound
- Stab wound
- Defense wound
- Self-inflicted wound

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge

Student should be able to classify various mechanical and firearm injuries and be able to device strategies for relevant medico legal proceedings. They will be able to describe the etiological details of regional injuries and their implications.

Skills

The will be able to examine an injured person and correlate the mechanism and types of injury. They can distinguish between ante and postmortem wounds. They can recognize the character of wound independently.

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor

Student will be able to:

1. Define (C1) and identify the various types of mechanical and firearm injuries.
2. (C2) list the types of ballistics and debate harm, wounding and Homicide(C1)
3. Examine an injured person;
4. certify nature, manner of cause,
5. Causative agent and dating of wounds.
6. Link sequlae of trauma to its original cause; and search for the relationship of sequlae to preexisting disease.
7. Identify the causes of death from wounds.
8. Distinguish between ante-mortem and post-mortem wounds.
9. Diagnose whether death is suicidal, homicidal and accidental.
10. Explain the differences between wounds inflicted by various modes of transportation.
11. The student should be able to describe possible etiologies of Regional Injuries. Like head (Scalp, skull , Brain) and face, Vertebral column and its contents, Neck, Chest, Abdomen, Limbs, Bones and Joints and Special trauma such as; Transportation injuries, Police torture and Deaths in Custody.

Sub- Topics-Firearm injuries

- Definition of firearm injury
- Classification of firearms
- Firearm injures
- Firearm and ballistics
- Medico legal aspects of firearm injury

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Student should be able to classify various mechanical and firearm injuries and be able to device strategies for relevant medico legal proceedings. They will be able to describe the etiological details of regional injuries and their implications.

Skills
The will be able to examine an injured person and correlate the mechanism and types of injury. They can distinguish between ante and postmortem wounds. They can recognize the character of wound independently.

Teaching Learning Methodology
Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor
Student will be able to:

1. Define (C1) and identify the various types of mechanical and firearm injuries.
2. (C2) list the types of ballistics and debate harm, wounding and Homicide(C1)
3. Examine an injured person;
4. certify nature, manner of cause,
5. Causative agent and dating of wounds.
6. Link sequelae of trauma to its original cause; and search for the relationship of sequlae to preexisting disease.
7. Identify the causes of death from wounds.
8. Distinguish between ante-mortem and post-mortem wounds.
9. Diagnose whether death is suicidal, homicidal and accidental.
10. Explain the differences between wounds inflicted by various modes of transportation.
11. The student should be able to describe possible etiologies of Regional Injuries. Like head (Scalp, skull , Brain) and face, Vertebral column and its contents, Neck, Chest, Abdomen, Limbs, Bones and Joints and Special trauma such as; Transportation injuries, Police torture and Deaths in Custody.

Sub- Topics - Regional Injuries

Head

- Skull
- Cerebral injury
- Injuries to Cranial Contents

Vertebral Column and Spinal Cord

- Face
- Neck
- Chest
- Abdomen
- Bones
- Joints

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

Student should be able to classify various mechanical and firearm injuries and be able to device strategies for relevant medico legal proceedings. They will be able to describe the etiological details of regional injuries and their implications.

Skills

The will be able to examine an injured person and correlate the mechanism and types of injury. They can distinguish between ante and postmortem wounds. They can recognize the character of wound independently.

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor

Student will be able to:

1. Define (C1) and identify the various types of mechanical and firearm injuries.
2. (C2) list the types of ballistics and debate harm, wounding and Homicide(C1)
3. Examine an injured person;
4. certify nature, manner of cause,
5. Causative agent and dating of wounds.
6. Link sequlae of trauma to its original cause; and search for the relationship of sequlae to preexisting disease.
7. Identify the causes of death from wounds.
8. Distinguish between ante-mortem and post-mortem wounds.
9. Diagnose whether death is suicidal, homicidal and accidental.
10. Explain the differences between wounds inflicted by various modes of transportation.
11. The student should be able to describe possible etiologies of Regional Injuries. Like head (Scalp, skull , Brain) and face, Vertebral column and its contents, Neck, Chest, Abdomen, Limbs, Bones and Joints and Special trauma such as; Transportation injuries, Police torture and Deaths in Custody.

Sub- Topics - Transportation Injuries
Motor Vehicle Injuries
Motor Cycle Injuries
Moped (Mini-bike) and Bicycle Injuries
Railway Injuries
Aircraft Injuries

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

Student should be able to classify various mechanical and firearm injuries and be able to device strategies for relevant medico legal proceedings. They will be able to describe the etiological details of regional injuries and their implications.

Skills

The will be able to examine an injured person and correlate the mechanism and types of injury. They can distinguish between ante and postmortem wounds. They can recognize the character of wound independently.

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor

Student will be able to:

1. Define (C1) and identify the various types of mechanical and firearm injuries.
2. (C2) list the types of ballistics and debate harm, wounding and Homicide(C1)
3. Examine an injured person;
4. certify nature, manner of cause,
5. Causative agent and dating of wounds.
6. Link sequlae of trauma to its original cause; and search for the relationship of sequlae to preexisting disease.
7. Identify the causes of death from wounds.
8. Distinguish between ante-mortem and post-mortem wounds.
9. Diagnose whether death is suicidal, homicidal and accidental.
10. Explain the differences between wounds inflicted by various modes of transportation.
11. The student should be able to describe possible etiologies of Regional Injuries. Like head (Scalp, skull , Brain) and face, Vertebral column and its contents, Neck, Chest, Abdomen, Limbs, Bones and Joints and Special trauma such as; Transportation injuries, Police torture and Deaths in Custody.

Forensic Medicine
Unit II
Sub Unit 2:- Non Mechanical Injuries

Sub- Topics - Introduction
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
They can explain mechanism and mode of death due to non-mechanical injuries and their medico legal implication.

Skills
Recognize various types of non-mechanical injuries independently

Teaching Learning Methodology
Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor
Student will be able to:
1. Definition of various non-mechanical injuries.
2. Describe the type and mode of death due to non-mechanical injuries like drowning, thermal injuries, burns, starvation, cold injuries etc.

Sub- Topics - Drowning
Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
They can explain mechanism and mode of death due to non-mechanical injuries and their medico legal implication.

Skills
Recognize various types of non-mechanical injuries independently

Teaching Learning Methodology
Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive / Psycho motor
Student will be able to:
1. Definition of various non-mechanical injuries.
2. Describe the type and mode of death due to non-mechanical injuries like drowning, thermal injuries, burns, starvation, cold injuries etc.

Sub- Topics - Thermal injuries

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

They can explain mechanism and mode of death due to non-mechanical injuries and their medico legal implication.

Skills

Recognize various types of non-mechanical injuries independently

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive / Psycho motor

Student will be able to:

1. Definition of various non-mechanical injuries.
2. Describe the type and mode of death due to non-mechanical injuries like drowning, thermal injuries, burns, starvation, cold injuries etc.

Sub- Topics - Electrocution

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

They can explain mechanism and mode of death due to non-mechanical injuries and their medico legal implication.

Skills

Recognize various types of non-mechanical injuries independently

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive / Psycho motor

Student will be able to:

1. Definition of various non-mechanical injuries.
2. Describe the type and mode of death due to non-mechanical injuries like drowning, thermal injuries, burns, starvation, cold injuries etc.

. Sub- Topics - Effect of environmental temperature

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

They can explain mechanism and mode of death due to non-mechanical injuries and their medico legal implication.

Skills

Recognize various types of non-mechanical injuries independently

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor

Student will be able to:

1. Definition of various non-mechanical injuries.
2. Describe the type and mode of death due to non-mechanical injuries like drowning, thermal injuries, burns, starvation, cold injuries etc.

Sub- Topics - Starvation

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

They can explain mechanism and mode of death due to non-mechanical injuries and their medico legal implication.

Skills

Recognize various types of non-mechanical injuries independently

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor

Student will be able to:

1. Definition of various non-mechanical injuries.
2. Describe the type and mode of death due to non-mechanical injuries like drowning, thermal injuries, burns, starvation, cold injuries etc.

Sub- Topics - Psychosocial aspects of burns

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

They can explain mechanism and mode of death due to non-mechanical injuries and their medico legal implication.

Skills

Recognize various types of non-mechanical injuries independently

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive / Psycho motor

Student will be able to:

1. Definition of various non-mechanical injuries.
2. Describe the type and mode of death due to non-mechanical injuries like drowning, thermal injuries, burns, starvation, cold injuries etc.

Forensic Medicine
Unit II
Sub Unit 3:- Death due to Asphyxia

Sub- Topics – Introduction

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

Student should be able to:

Classify causes of; and detect the Anatomical, Physiological, Biochemical and Pathological signs of violent death.

Skills

Recognize and specify findings on dead bodies in asphyxia deaths.

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs/ visit to scene of crime

Learning Objective Cognitive / Psycho motor

Student will be able to:

1. Define and classify asphyxia deaths.
2. They can describe the structural, functional biochemical and pathological changes in asphyxia deaths.

Sub- Topics - Classification of asphyxia

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

Knowledge

Student should be able to:

Classify causes of; and detect the Anatomical, Physiological, Biochemical and Pathological signs of violent death.

Skills

Recognize and specify findings on dead bodies in asphyxia deaths.

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs/ visit to scene of crime

Learning Objective Cognitive/ Psycho motor

Student will be able to:

1. Define and classify asphyxial deaths.
2. They can describe the structural, functional biochemical and pathological changes in asphyxia deaths.

. Sub- Topics - Autopsy findings

Lecture: **30 minutes**

Interactive Session: **15 minutes (2MCQs/case history)**

No. of slides: **12-15**

Teacher: **Assistant Prof. / Senior Registrar/Consultant**

Duration of lecture: 45 minutes

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Knowledge

Student should be able to:

Classify causes of; and detect the Anatomical, Physiological, Biochemical and Pathological signs of violent death.

Skills

Recognize and specify findings on dead bodies in asphyxial deaths.

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs/ visit to scene of crime

Learning Objective Cognitive/ Psycho motor

Student will be able to:

1. Define and classify asphyxial deaths.
2. They can describe the structural, functional biochemical and pathological changes in asphyxia deaths.

Forensic Medicine
Unit III
Sub Unit :- Social Crime

Sub- Topics

1. Introduction
2. Laws of criminal responsibility
3. Domestic violence
4. Medico legal aspects of
    - Importance
    - Sterility
    - Virginity
    - Delivery
5. Laws relating to abortion and methods abortion
6. Cause-effect relationship in abortion
7. Cause-effect relationship in abortion
8. Law relating to sexual offences
9. Childhood sexual abuse
10. Steps of examination of victim and assailant

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge

Student should be able to:
Understand the magnitude and mechanism of prevalent social crimes in Pakistan, and laws related to sexual offences in country

Skills

Can perform examination of an insane admitted at psychiatry dept. and can examine a victim of child abuse, identify infanticide and criminal and non-accidental violence or abuse to a new born, infant or child. Actively participate in examination of victim and assailant of natural/unnatural sexual offences and assist collection, preservation and dispatch of body fluids and tissue.

Teaching Learning Methodology

Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs/ visit to scene of crime

Learning Objective Cognitive/ Psycho motor

At end of the session student will be able to:

1. Explain the laws relating to criminal responsibility and insanity.
2. Explain the magnitude of the problem related to child abuse.
3. Describe the phenomena of battered wife and related laws.
4. Explain importance, sterility, virginity, pregnancy and delivery.

5. List the types and methods of abortion and justifiable (therapeutic) and unjustifiable (criminal abortion).
6. Explain laws relating to sexual offences.

Forensic Medicine
Unit IV
Sub Unit: - Toxicology

Sub- Topics
1. Introduction
2. Introduction to self-harm
3. Classification of poisons
4. Legal duties of a doctor and stator law relating to drugs
5. Signs and symptoms of common poison
6. Management and prevention of common poisoning
7. Toxicological investigation
8. Autopsy findings in poisoning
9. Collection, preservation and dispatch of body specimens to analytical lab

Lecture: **30 minutes**
Interactive Session: **15 minutes (2MCQs/case history)**
No. of slides: **12-15**
Teacher: **Assistant Prof. / Senior Registrar/Consultant**
Duration of lecture: 45 minutes

Knowledge
Student should be able to:
Understand the magnitude and mechanism of prevalent social crimes in Pakistan, and laws related to sexual offences in country

Skills
Identify the signs, symptoms and management of common poisoning. They should assist in preservation of specimen in cases of poisoning

Teaching Learning Methodology
Lectures /SGDs/Demonstrations / Hospital Visits in casualty dept. and mortuary/ FGDs

Learning Objective Cognitive/ Psycho motor
At end of the session student will be able to:
1. Classify poisoning,

2. describe the duties of medico legal officers in case of poisoning,
3. describe laws relating to drugs
4. Explain the steps of management of case of poisoning.
5. List the toxicological investigations.

DEPARTMENT OF PATHOLOGY
LEARNING OUTCOMES
3RD YEAR M.B.B.S

LEARNING OBJECTIVES IN GENERAL PATHOLOGY AND MICROBIOLOGY:

By the end of each respective teaching session, the students should be able to understand and make use of the following for clinical correlation, diagnosis and management where applicable:

GENERAL PATHOLOGY

TOPIC	**CELL INJURY**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Necrosis, Ischemia, Hypoxia, Infarction and Gangrene Oncosis and Autolysis.
2. Sequence of the ultra-structural and biochemical changes which occur in the cell in response to the following

- ✓ Ischemia
- ✓ Immunological injury, e.g., Asthma / SLE / Anaphylactic reaction
- ✓ Physical agents, e.g., Radiation
- ✓ Genetic defects, e.g., Thalassemia / Hemophilia
- ✓ Nutritional deficiency, e.g., Kwashiorkor
- ✓ Infectious agents
- ✓ Viruses, e.g., Hepatitis
- ✓ Bacteria, e.g., Staphylococcus aureus
- ✓ Fungi, e.g., Candida
- ✓ Parasites, e.g., Malaria
- ✓ Nutritional deficiency

3. Irreversible and reversible injury
4. Apoptosis and its significance.
5. Necrosis and its types
6. Exogenous and endogenous pigmentation.
7. Dystrophic and metastatic calcification along with clinical significance.

8. Metabolic disorders
• Lipid disorders, Steatosis of liver, Hyperlipidemia
• Protein disorders
• Carbohydrate disorders

TOPIC **INFLAMMATION, MEDIATORS OF INFLAMMATION**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min.
	Lecture 45 min
	Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Role of inflammation in the defense mechanisms of the body.
2. Vascular changes of acute inflammation and their relation to morphological and tissue effects.
3. Process of Chemotaxis, Opsonization and Phagocytosis.
4. Role of cellular components in inflammatory exudate.
5. Exudates and transudate.
6. Important chemical mediators of inflammation.
7. Pathway of Arachidonic Acid metabolism.
8. Role of products of Arachidonic acid metabolism in inflammation.
9. Mechanism for development of fever, with reference to exogenous and endogenous pyrogens.
10. Chronic inflammation including Granulomas.
11. Granuloma and its types along with causes.
12. Systemic effects of acute and chronic inflammation and their possible outcomes.
13. Significance of ESR.
14. Induced hypothermia in medicine.
15. Healing in specialized tissue.

TOPIC **WOUND HEALING**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min.
	Lecture 45 min
	Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Repair and regeneration.
2. Wound healing by first and second intention.
3. Factors that influence the inflammatory reparative response.
4. Wound contraction and cicatrisation.
5. Formation of granulation tissue.
6. Complications of wound healing.

TOPIC	**DISORDERS OF CIRCULATION**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

a. Thrombo-embolic disorders and their modalities

1. Etiology and pathogenesis of thrombosis.
2. Possible consequences of thrombosis
3. Difference between thrombi and clots
4. Classification of emboli according to their composition.
5. Difference between arterial and venous emboli.

b. Hemorrhage, Hyperemia and Congestion

1. Definitions of common types of Hemorrhage
2. Types of hyperemia
3. Difference between hyperemia and congestion

c. Infarction

1. Types of infarction
2. Difference between anemic and hemorrhagic infarct
3. Morphological picture of infraction in different organ systems

d. Disorders of the circulation and shock

1. Edema, ascites, hydrothorax and anasarca.
2. Pathophysiology of edema with special emphasis on CHF.
3. Pathogenesis of four major types of shock (Hypovolemic, Cardiogenic, vasovagal & septic) and their causes.
4. Compensatory mechanisms involved in shock.

TOPIC	**MICROBIOLOGY**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Defense mechanisms of the body.
2. Microbial mechanisms of invasion and virulence.
3. Difference between sterilization and disinfection.
4. Methods of disinfection and sterilization of the following:

a. Facility where the doctor practices,
b. Examination table,
c. Any spillage e.g. sputum, vomitus, stool, urine, blood,
d. Examination tools, e.g., thermometer, nasal and ear specula and spatula,
5. Principles of aseptic techniques such as Venipuncture, urinary Catheterization, bandaging, suturing and lumber puncture.
6. Universal precautions for infection control.
7. General principles of the following serological tests:
a. ELISA – Hepatitis (A, B, C, D, E, G) Rubella, CMV and HIV
b. PCR
c. Haemagglutination – TPHA
d. Western Blot –HIV, Malaria.

8. Interpretation of:
a. Culture reports
b. Serological reports and
c. Microscopic reports of gram stain and ZN stain.

9. Principles of proper collection and submission of specimens for laboratory investigations
10. General characteristics and taxonomy of Bacteria, Rickettsia, Chlamydia, Viruses and Fungi.
11. Communicable, Endemic, Epidemic, Pandemic Diseases, Carriers Pathogens, Opportunists, commensals and colonizers.

12. Microorganisms responsible for infection of the following organ systems:

- ✓ Central Nervous System
- ✓ Respiratory System
- ✓ Gastrointestinal System
- ✓ Genital System
- ✓ Urinary System
- ✓ Infections of Bones and Joints
- ✓ Zoonosis
- ✓ Infection of the Skin
- ✓ Hepatic Infections
- ✓

13. Pathogenesis, Treatment, Epidemiology, Prevention and Control of the Following organisms:

(i) Bacteria

- ✓ Staphylococcus aureus
- ✓ Streptococcus pneumoniae
- ✓ Beta hemolytic streptococcus group a & b
- ✓ Diphtheria species.
- ✓ Bordetella species.
- ✓ Bacillus anthracis
- ✓ Clostridium perfrignes
- ✓ Clostridium botulinum,
- ✓ Clostridium difficile
- ✓ Clostridium tetani
- ✓ Actinomycies israelli
- ✓ Nocardia asteroides
- ✓ Neisseria meningitis
- ✓ Neisseria gonorrhoeae
- ✓ Gardenella vaginalis
- ✓ Haemophilus influenzae
- ✓ Mycobacterium tuberculosis
- ✓ Mycobacterium leprae
- ✓ E.coli
- ✓ Klebsiella
- ✓ Proteus
- ✓ Salmonella
- ✓ Shigella
- ✓ Yersinia pestis
- ✓ Pseudomonas
- ✓ Vibrio cholera
- ✓ Vibrio parahemolyticus
- ✓ Campylobacter jejuni
- ✓ Helicobacter pylori
- ✓ Legionella Mycoplasma pneumoniae
- ✓ Chlamydia
- ✓ Treponema pallidium
- ✓ Leptospira, Rickettsia species.

(ii) Viruses

- ✓ Mumps
- ✓ Herpes
- ✓ Measles
- ✓ Influenza,
- ✓ Para influenza
- ✓ RSV
- ✓ Hepatitis A, B, C, D, E
- ✓ Rota

- ✓ CMV
- ✓ EBV
- ✓ Rubella
- ✓ Chicken Pox
- ✓ HIV
- ✓ Rabies

(iii) Fungus

- ✓ Cryptococcus neoformans
- ✓ Candida albicans
- ✓ Tinea species

(iv) Protozoa

- ✓ Plasmodium species
- ✓ Giardia lamblia
- ✓ Entamoeba histolytica
- ✓ Cryptosporidium
- ✓ Leishmania species
- ✓ Trichomonas vaginalis
- ✓ Toxoplasma gondii
- ✓ Pneumocyctis carinii

(v) Helminths

- ✓ Ascaris lumbricoides
- ✓ Ancylostoma duodenale
- ✓ Trichuris trichuria
- ✓ Enterobius vermicularis
- ✓ Filaria species
- ✓ Strongyloides stercoralis
- ✓ Schistosoma species
- ✓ Echinococcus species
- ✓ Taenia solium
- ✓ Taenia saginata
- ✓ Hymenolepis nana

Topic:	**PRINCIPLES OF ANTI MICROBIAL ACTION.**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Antibiotics, selective toxicity, bacteriostatic and bactericidal.
2. Host determinants in relation to selection of an antimicrobial drug for therapy.
3. Minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC)
4. Bacterial resistance and the mechanisms involved in acquiring bacterial resistance
5. Mechanisms involved in transfer of drug resistance to bacterial resistance.
6. Mode of action of various antimicrobial drug groups.
7. Super infection and cross sensitivity.

Topic **LIST OF COMMON ORGANISMS CAUSING ORGAN SYSTEM EFFECTS**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

a. Common organisms causing CNS Infections

(i) Bacteria

- ✓ Steptococcus pneumoniae
- ✓ Beta hemolyticus srteptococcus group b
- ✓ Neisseria meningitidis
- ✓ Haemophilis influenzae
- ✓ Mycobacterium tuberculosis.
- ✓ E.coli
- ✓ Listeria monocytogenes

(ii) Viruses

- ✓ Enterovirus
- ✓ Mumps
- ✓ Herpes
- ✓ Adenovirus

(iii) Fungus

- ✓ Cryptococcus neoformis

(iv) Protozoa

- ✓ Malaria
- ✓ Toxoplasma

B. Topic **Common organisms causing respiratory tract infection**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

(i) Bacteria:

- ✓ Steptococcus pneumoniae
- ✓ Beta hemolyticus streptococcus group b
- ✓ Diptheria sp.
- ✓ Bordetella sp.
- ✓ Hemophilus influenza
- ✓ Mycobacteriurn tuberculosis
- ✓ Klebsiella
- ✓ Legionella
- ✓ Mycoplasma pneumoniae

(ii) Viruses

- ✓ Herpes
- ✓ Adeno virus
- ✓ Measles
- ✓ Influenza
- ✓ Para influenza
- ✓ Rhinovirus
- ✓ RSV

(iii) Protozoa

- ✓ Pneumocystic carinii

C. TOPIC **ORGANISMS CAUSING GASTROINTESTINAL TRACT INFECTION / INFESTATION**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

(i) Bacteria

- ✓ Clostridium difficile
- ✓ Mycobacterium tuberculosis
- ✓ Salmonella
- ✓ Shigella
- ✓ Vibrio cholera
- ✓ Vibrio parahemolyticus
- ✓ Campylobacter jejuni
- ✓ Helicobacter pylori

(ii) Viruses

- ✓ Hepatitis A
- ✓ Rota
- ✓ Astro

(iii) Fungus

- ✓ Cryptococcus neoformis

(vi) Protozoa

- ✓ Giardia lamblia
- ✓ Entameba histolytica
- ✓ Cryptosporidium

D. Topic **Common organisms causing hepatic infections**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

(i) Bacteria

- ✓ Streptococcus species
- ✓ Coliforms
- ✓ Anaerobes

(ii) Viruses

- ✓ Herpes
- ✓ Hepatitis A, B, C, D, E
- ✓ CMV
- ✓ EBV

(iii) Protozoa

- ✓ Entameba histolytica
- ✓ Tape worms
- ✓ Echinococcus granulosus

E. TOPIC **COMMON ORGANISMS CAUSING SKIN INFECTION**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

(i) Bacteria

- ✓ staphylococcus aureus
- ✓ streptococcus pyogenes
- ✓ actinomyces israelli
- ✓ nocardia asteroides
- ✓ mycobacterium tuberculosis
- ✓ mycobacterium leprae
- ✓ corynebacterium diphtheriae

(ii) Viruses

- ✓ Herpes
- ✓ Measles
- ✓ Rubella,
- ✓ Chicken pox
- ✓ Moluscum contagiosum

(iii) Fungus

- ✓ Candida albicans
- ✓ Tinea species

(iv) Arthropods

- ✓ Sarcoptes scabiei
- ✓ Pediculus species
- ✓ Cinex lectularius

(v) Helminthes

- ✓ Filaria species
- ✓ Strongyloides stercoralis

- ✓ Schistosoma species.

(vi) Protozoa:

- ✓ Leishmania species.

F. TOPIC **COMMON ORGANISMS CAUSING BONE AND JOINT INFECTION**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

Bacteria:

- ✓ Staph aureus,
- ✓ Streptococcus pyogenes,
- ✓ Haemophilus
- ✓ influenzae,
- ✓ Neisseria gonorrhoeae,
- ✓ Brucella melitenesis,
- ✓ Salmonella typhi,
- ✓ Strep. pneumonae,
- ✓ Pseudomonas sp. and Mycobacterium tuberculosis.

G. TOPIC **COMMON ORGANISMS CAUSING GENITAL INFECTION**

Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

(i) Bacteria: Mycoplasma urealyticum

(ii) Viruses: Pox, Herpes, Hepatitis B, HIV
(iii) Fungus: Candida albicans
(iv) Arthropodes: Sarcoptes scabiei
(v) Protozoa: Tricomonas vaginalis

H. TOPIC	**COMMON ORGANISMS CAUSING ZOONOSIS**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

(i) Viruses: Rabies,
(ii) Protozoa: Toxoplasma gondii, Leishmania sp.
(iii) Helminthic: Echinococcus sp.

Topic	**GENETICS**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Common sex linked, autosomal recessive and autosomal dominant disorders.
2. Common genetic mutations.
3. Diseases associated with consanguineous marriages.
4. Molecular biology techniques.

Topic	**GROWTH DISORERS/NEOPLASIA**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Atrophy and Hypertrophy, Agenesis, Dysgensis, Aplasia, Hypoplasia, Hyperplasia, Metaplasia, Dysplasia, Neoplasia, Anaplasia.
2. Cell cycle and cell types (stable, labile, permanent)
3. Mechanisms controlling cell growth
4. Classification systems of tumors.
5. Characteristics of benign and malignant tumors
6. Difference between Carcinoma and Sarcoma.
7. Grading and staging system of tumors.
8. Biology of tumor growth
9. Process of carcinogenesis
10. Host defense against tumors.
11. Mechanism of local and distant spread.
12. Local and systemic effects of tumors.
13. Tumor markers used in the diagnosis and management of cancers.
14. Common chemical, physical agents and viruses related to human cancer.
15. Epidemiology of common cancers in Pakistan.
16. Radiation and its effects on tissues.
17. Cancer screening.

Topic	**IMMUNOLOGY**
Mode of Teaching:	Lecture
Class:	3rd year
No of Slides:	12-16
Assessment	3 MCQs
Teacher:	Assistant Professor/ SR/ consultant
Duration of Lecture:	60 min. Lecture 45 min Interactive 15 min

At the end of the lecture student shall be able to understand:

1. Antigen, antibody, epitope, hapten and adhesion molecules.
2. Difference between innate and acquired immunity.
3. Structure and function of major histocompatibility complex (MHC).

4. Cytokines.
5. Mechanism of humoral and cell medicated immunity.
6. Hypersensitivity reactions, Type I, Type II, Type III and Type IV.
7. Auto graft, homograft, allograft and xenograft.
8. Immune tolerance and immune paralysis.
9. Mechanism involved in allograft rejection and steps that can be taken to combat rejection.
10. Classification of Immunodeficiency disorders
11. Basis of autoimmunity.
12. Tissue transplantation.
13. Pathology and pathogenesis of AIDS.
14. Lab diagnosis of immunological diseases.