
Lesson Plan: Haematopathology: Lecture 1

Topic: Introduction to Haematopathology & Haemopoiesis

Duration: 1 hour

Learning Objectives

By the end of the session, students should be able to:

- Define haematopathology.
- Describe normal haemopoiesis.
- Explain functions of blood cells.
- Identify sites of haemopoiesis during fetal and adult life.

Teaching Content

- Introduction to haematopathology
- Components of blood
- Bone marrow structure
- Stem cells and differentiation
- Growth factors (EPO, G-CSF, TPO)

Teaching Methods

- Interactive lecture
- PowerPoint presentation
- Question-answer session

Teaching Aids

- PPT slides
- Bone marrow diagrams
- Whiteboard

Time Distribution

- Introduction – 5 min
- Lecture – 40 min
- Discussion – 10 min
- Summary – 5 min

Lesson Plan: Haematopathology: Lecture 2

Topic: Anaemia

Duration: 1 hour

Learning Objectives

Students will be able to:

- Define anaemia.
- Classify anaemia morphologically and etiologically.
- Explain laboratory investigations.
- Correlate pathology with clinical features.

Teaching Content

- Definition
- Classification
- Causes
- Peripheral blood smear findings
- Diagnostic approach

Teaching Methods

- Lecture
- Case discussion

Teaching Aids

- PPT
- Blood smear photographs

Time Distribution

- Introduction – 5 min
- Lecture – 40 min
- Case discussion – 10 min
- Summary – 5 min

Assessment

- Viva questions
- MCQs

Lesson Plan: Haematopathology: Lecture 3

Topic: Iron Deficiency Anaemia & Megaloblastic Anaemia

Duration: 1 hour

Learning Objectives

Students should be able to:

- Describe causes.
- Explain pathogenesis.
- Compare laboratory findings.
- Differentiate iron deficiency from megaloblastic anaemia.

Teaching Content

- Iron metabolism
- Iron deficiency anaemia
- Vitamin B12 deficiency
- Folate deficiency
- Peripheral smear findings

Teaching Methods

- Interactive lecture
- Comparison tables

Teaching Aids

- PPT
- Charts
- Microscopic images

Time Distribution

- Lecture – 45 min
- Discussion – 10 min
- Summary – 5 min

Assessment

- Short-answer questions

Lesson Plan: Haematopathology: Lecture 4

Topic: Haemolytic Anaemia

Duration: 1 hour

Learning Objectives

Students will:

- Define haemolysis.
- Classify haemolytic anaemias.
- Explain laboratory diagnosis.
- Describe hereditary and acquired causes.

Teaching Content

- Mechanism of haemolysis
- Intrinsic causes
- Extrinsic causes
- Laboratory findings
- Complications

Teaching Methods

- Lecture
- Clinical correlation

Teaching Aids

- PPT
- Peripheral smear images

Time Distribution

- Introduction – 5 min
- Lecture – 40 min
- Discussion – 10 min
- Summary – 5 min

Assessment

- MCQs
- Oral questions

Lesson Plan: Haematopathology: Lecture 5

Topic: Haemoglobinopathies

Duration: 1 hour

Learning Objectives

Students should be able to:

- Explain sickle cell disease.
- Describe thalassaemia.
- Understand genetic basis.
- Interpret investigations.

Teaching Content

- Normal haemoglobin
- Sickle cell disease
- α - and β -thalassaemia
- Laboratory diagnosis

Teaching Methods

- Lecture
- Problem-based learning

Teaching Aids

- PPT
- Gene mutation diagrams

Time Distribution

- Lecture – 45 min
- Discussion – 10 min
- Summary – 5 min

Assessment

- MCQs
- Viva

Lesson Plan: Haematopathology: Lecture 6

Topic: Disorders of White Blood Cells

Duration: 1 hour

Learning Objectives

Students should:

- Define leukocytosis and leukopenia.
- Classify WBC disorders.
- Explain causes.
- Interpret differential counts.

Teaching Content

- Normal leukocyte count
- Neutrophilia
- Lymphocytosis
- Eosinophilia
- Leukopenia

Teaching Methods

- Interactive lecture
- Case discussion

Teaching Aids

- PPT
- CBC reports

Time Distribution

- Lecture – 45 min
- Discussion – 10 min
- Summary – 5 min

Assessment

- Oral questions

Lesson Plan: Haematopathology: Lecture 7

Topic: Acute Leukaemia

Duration: 1 hour

Learning Objectives

Students will:

- Define acute leukaemia.
- Differentiate AML and ALL.
- Explain pathogenesis.
- Describe laboratory diagnosis.

Teaching Content

- Classification
- Clinical features
- Bone marrow findings
- Cytochemistry
- Flow cytometry

Teaching Methods

- Lecture
- Clinical case discussion

Teaching Aids

- PPT
- Bone marrow photographs

Time Distribution

- Lecture – 45 min
- Discussion – 10 min
- Summary – 5 min

Assessment

- MCQs
- Viva

Lesson Plan: Haematopathology: Lecture 8

Topic: Chronic Leukaemia

Duration: 1 hour

Learning Objectives

Students should:

- Compare CML and CLL.
- Explain molecular pathology.
- Describe laboratory diagnosis.
- Discuss prognosis.

Teaching Content

- CML
- Philadelphia chromosome
- CLL
- Laboratory investigations

Teaching Methods

- Lecture
- Clinical correlation

Teaching Aids

- PPT
- Blood smear images

Time Distribution

- Lecture – 45 min
- Discussion – 10 min
- Summary – 5 min

Assessment

- Short-answer questions
-

Lesson Plan: Haematopathology: Lecture 9

Topic: Plasma Cell Disorders

Duration: 1 hour

Learning Objectives

By the end of the session, students will be able to:

1. Define plasma cell dyscrasias.
2. Classify major plasma cell disorders.
3. Describe the pathogenesis, morphology, clinical features, laboratory diagnosis, and complications of multiple myeloma.
4. Differentiate multiple myeloma from MGUS and solitary plasmacytoma.

Time Breakdown

Time	Content
0–5 min	Introduction: Plasma cells, immunoglobulin production, definition of plasma cell dyscrasias
5–15 min	Classification: MGUS, Multiple Myeloma, Solitary Plasmacytoma, Plasma Cell Leukemia, Waldenström Macroglobulinemia (brief comparison)
15–35 min	Multiple Myeloma: Etiology, pathogenesis, morphology, CRAB features, laboratory findings (M protein, Bence Jones protein), diagnosis
35–45 min	Complications: Bone lesions, renal failure, infections, amyloidosis, hyperviscosity syndrome
45–55 min	Differential diagnosis: MGUS vs Multiple Myeloma vs Solitary Plasmacytoma
55–60 min	Summary, key take-home messages, MCQs, and student questions

Assessment

- Oral questions during class
- 5 MCQs at the end of the lecture
- Interpretation of serum protein electrophoresis and X-ray findings
-

Lesson Plan: Haematopathology: Lecture 10

Topic: Bleeding Disorders & Platelet Disorders

Duration: 1 hour

Learning Objectives

Students should:

- Explain haemostasis.
- Classify bleeding disorders.
- Describe platelet disorders.
- Interpret coagulation tests.

Teaching Content

- Normal haemostasis
- Thrombocytopenia
- ITP
- DIC
- Haemophilia
- PT, APTT, bleeding time

Teaching Methods

- Lecture
- Laboratory data interpretation

Teaching Aids

- PPT
- Flowcharts
- Coagulation profiles

Time Distribution

- Lecture – 45 min
- Discussion – 10 min
- Summary – 5 min

Assessment

- MCQs
- Case-based question

Lesson Plan: Lymphoreticular Diseases Lecture 1

Topic:– Reactive Lymphadenitis & Non-Neoplastic Disorders

Duration: 1 Hour

Learning Objectives

By the end of the class, students will be able to:

1. Describe the structure and function of the lymphoreticular system.
2. Classify causes of lymphadenopathy.
3. Explain the pathology of acute and chronic lymphadenitis.
4. Differentiate reactive lymphadenitis from malignant lymph node enlargement.

Lesson Breakdown

Time	Content
5 min	Introduction to the lymphoreticular system (lymph nodes, spleen, thymus, lymphoid tissues)
10 min	Causes of lymphadenopathy and classification
15 min	Acute and chronic lymphadenitis: etiology, morphology, clinical features
15 min	Reactive lymphoid hyperplasia (follicular, paracortical, sinus histiocytosis)
10 min	Differential diagnosis of reactive vs malignant lymphadenopathy
5 min	Summary and formative assessment (MCQs/Q&A)

Evaluation

- Oral questions
- 5 MCQs
- Interpretation of one histopathology slide

Lesson Plan: Lymphoreticular Diseases: Lecture 2

Topic: II – Lymphomas

Duration: 1 Hour

Learning Objectives

By the end of the class, students will be able to:

1. Classify lymphomas according to WHO classification (overview).
2. Describe the pathology of Hodgkin lymphoma.
3. Differentiate Hodgkin lymphoma from Non-Hodgkin lymphoma.
4. Correlate morphology with clinical features and prognosis.

Lesson Breakdown

Time	Content
5 min	Introduction and classification of lymphomas
15 min	Hodgkin lymphoma: etiology, Reed–Sternberg cells, subtypes, pathology, clinical features
20 min	Non-Hodgkin lymphoma: classification, pathology, common clinicopathological features
10 min	Comparison of Hodgkin vs Non-Hodgkin lymphoma
5 min	Clinical cases and interpretation of histopathology
5 min	Summary and formative assessment

Evaluation

- Oral questioning
- 5 MCQs
- Identification of Reed–Sternberg cell and lymphoma histology

Recommended Reading

- Robbins & Cotran Pathologic Basis of Disease (Latest Edition)
- Harsh Mohan Textbook of Pathology

Lesson Plan: Lecture (1 Hour)

Topic: Introduction to Pathology

Duration: 1 Hour (60 minutes)

Learning Objectives

By the end of the lecture, students will be able to:

1. Define pathology and explain its importance in medicine.
 2. Describe the major branches of pathology.
 3. Define etiology, pathogenesis, and morphology.
 4. Explain the relationship between etiology, pathogenesis, morphological changes, and clinical manifestations.
-

Lesson Outline (60 Minutes)

1. Introduction to Pathology (10 minutes)

- Definition of pathology
 - Importance of pathology in understanding disease
 - Scope of pathology in medical practice
-

2. Different Branches of Pathology (15 minutes)

- General Pathology
- Systemic (Special) Pathology
- Anatomical Pathology
- Clinical Pathology
- Histopathology
- Cytopathology
- Hematopathology
- Molecular Pathology
- Forensic Pathology

3. Basic Concepts of Disease (25 minutes)

Etiology

- Definition
- Intrinsic (genetic) causes
- Extrinsic (environmental) causes

Pathogenesis

- Definition
- Sequence of events from the cause to disease development

Morphology

- Definition
- Gross changes
- Microscopic changes
- Ultrastructural and molecular alterations

Correlation

Etiology → Pathogenesis → Morphological Changes → Clinical Features

Use examples such as:

- Tuberculosis
- Diabetes mellitus
- Myocardial infarction

4. Summary and Assessment (10 minutes)

- Recap key concepts
 - Short interactive quiz:
 - Define pathology.
 - Name four branches of pathology.
 - What is etiology?
 - Differentiate etiology and pathogenesis.
 - What is morphology?
-

Evaluation

- Oral questioning during class
 - Participation in discussion
 - End-of-class quiz (5 MCQs)
-

References

1. Robbins & Cotran Pathologic Basis of Disease
2. Robbins Basic Pathology
3. Harsh Mohan Textbook of Pathology

Lesson Plan: Acute Inflammation

Lecture 1 (1 Hour)

Topic: Introduction and Vascular Events in Acute Inflammation

Learning Objectives

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

- Define inflammation and acute inflammation.
- Explain the cardinal signs of inflammation.
- Describe the causes of acute inflammation.
- Explain vascular changes during acute inflammation.

Lecture Outline

1. Introduction (10 min)

- Definition of inflammation
- Acute vs. chronic inflammation
- Purpose and protective role

2. Cardinal Signs (10 min)

- Rubor (Redness)
- Calor (Heat)
- Tumor (Swelling)
- Dolor (Pain)
- Functio laesa (Loss of function)

3. Causes of Acute Inflammation (10 min)

- Infections
- Tissue necrosis
- Physical agents
- Chemical agents
- Foreign bodies
- Immune reactions

4. Vascular Events (25 min)

- Brief vasoconstriction
- Vasodilation
- Increased vascular permeability
- Exudation
- Hemoconcentration
- Stasis

5. Summary & Questions (5 min)

Teaching Methods

- PowerPoint
- Board diagrams
- Clinical examples

Teaching Aids

- Histology slides
- Flowchart of vascular events

Assessment

- MCQs
 - Oral questioning
-

Lecture 2 (1 Hour)

Topic: Cellular Events and Chemical Mediators

Learning Objectives

Students should be able to:

- Explain leukocyte recruitment.
- Describe phagocytosis.
- List important inflammatory mediators.
- Correlate mediators with clinical manifestations.

Lecture Outline

1. Recap (5 min)

2. Leukocyte Recruitment (20 min)

- Margination
- Rolling
- Adhesion
- Transmigration (Diapedesis)
- Chemotaxis

3. Phagocytosis (15 min)

- Recognition
- Engulfment
- Killing
- Oxygen-dependent mechanisms
- Oxygen-independent mechanisms

4. Chemical Mediators (15 min)

- Histamine
- Serotonin
- Prostaglandins
- Leukotrienes
- Cytokines
- Complement
- Bradykinin
- Nitric oxide

5. Summary (5 min)

Teaching Methods

- Interactive lecture
- Animation
- Histopathology images

Assessment

- Short-answer questions
 - MCQs
-

Lecture 3 (1 Hour)

Topic: Morphological Patterns and Outcomes of Acute Inflammation

Learning Objectives

Students should be able to:

- Identify different morphological patterns.
- Explain possible outcomes.
- Differentiate exudate and transudate.

Lecture Outline

1. Review (5 min)

2. Morphological Patterns (25 min)

- Serous inflammation
- Fibrinous inflammation
- Suppurative (Purulent) inflammation
- Membranous inflammation
- Ulcer

3. Exudate vs Transudate (10 min)

Exudate	Transudate
High protein	Low protein
High cells	Few cells
Inflammatory	Non-inflammatory

4. Outcomes (15 min)

- Complete resolution
- Healing by fibrosis
- Abscess formation
- Progression to chronic inflammation

5. Summary (5 min)

Teaching Methods

- Gross pathology images
- Microscopic slides
- Clinical correlation

Assessment

- Case discussion
 - Viva questions
-

Lecture 4 (1 Hour)

Topic: Clinical Correlation and Disorders of Acute Inflammation

Learning Objectives

Students should be able to:

- Apply knowledge to clinical cases.
- Explain systemic effects.
- Describe laboratory findings.
- Understand complications of acute inflammation.

Lecture Outline

1. Review (5 min)

2. Systemic Effects (15 min)

- Fever
- Leukocytosis
- Acute-phase proteins
- Tachycardia
- Malaise
- Anorexia

3. Laboratory Diagnosis (10 min)

- CBC
- ESR
- CRP
- Procalcitonin

4. Clinical Case Discussions (20 min)

- Acute appendicitis
- Cellulitis
- Pneumonia
- Acute abscess

5. Complications (5 min)

- Sepsis

- Septic shock
- Organ dysfunction

6. Wrap-up & Revision (5 min)

- Key concepts
- Common examination questions

Teaching Methods

- Problem-based learning
- Clinical case discussion
- Interactive questioning

Assessment

- MCQs
- Short-answer questions
- Clinical case-based viva

Overall Learning Outcomes

At the end of the four lectures, MBBS students should be able to:

- Define and classify acute inflammation.
- Describe vascular and cellular events.
- Explain the roles of major chemical mediators.
- Recognize morphological patterns and outcomes.
- Interpret laboratory findings related to acute inflammation.
- Apply pathological concepts to common clinical conditions such as appendicitis, pneumonia, cellulitis, and abscesses.

Topic: Chronic Inflammation

Duration: 1 Hour Lecture

Learning Objectives

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

1. Define chronic inflammation.
2. Describe the causes of chronic inflammation.
3. Explain the cellular components involved.
4. Discuss the morphological features and mechanisms of tissue destruction and repair.
5. Recognize granulomatous inflammation with examples.
6. Correlate chronic inflammation with common clinical diseases.

Lesson Schedule (60 Minutes)

Time	Topic
0–5 min	Introduction and definition of inflammation; difference between acute and chronic inflammation
5–15 min	Causes of chronic inflammation (persistent infections, autoimmune diseases, prolonged exposure to toxins, unresolved acute inflammation)
15–25 min	Cellular components (macrophages, lymphocytes, plasma cells, eosinophils, mast cells)
25–35 min	Mechanisms of chronic inflammation: tissue destruction, repair, fibrosis, angiogenesis
35–45 min	Granulomatous inflammation: definition, formation, types, examples (Tuberculosis, Leprosy, Sarcoidosis, Foreign-body granuloma)
45–55 min	Clinical correlations and complications (fibrosis, organ dysfunction, chronic liver disease, rheumatoid arthritis)
55–60 min	Summary, key take-home messages, and formative assessment (MCQs/Q&A)

Teaching Methods

- Interactive lecture
 - PowerPoint presentation
 - Histopathology images
 - Clinical case discussion
 - Question–answer session
-

Assessment

- Oral questioning during the lecture
 - 3–5 MCQs at the end
 - Identification of histopathology slides (if available)
-

Key Take-Home Messages

- Chronic inflammation is prolonged inflammation characterized by simultaneous inflammation, tissue injury, and healing.
 - Macrophages are the principal cells in chronic inflammation.
 - Persistent infections and autoimmune diseases are common causes.
 - Granulomatous inflammation is a distinctive pattern of chronic inflammation.
 - Chronic inflammation may lead to fibrosis and permanent organ damage.
-

Recommended Reading

1. Robbins & Cotran Pathologic Basis of Disease – Chapter on Acute and Chronic Inflammation.
2. Robbins Basic Pathology – Inflammation chapter.
3. Harsh Mohan Textbook of Pathology – General Pathology: Inflammation.

Lecture: Tissue Repair

Duration: 1 Hour

Learning Objectives

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

1. Define tissue repair and regeneration.
2. Differentiate between regeneration and repair.
3. Explain the phases of tissue repair.
4. Describe factors affecting tissue repair.
5. Discuss complications of tissue repair.

Lecture Outline

Time	Topic
5 min	Introduction: Tissue injury and repair
10 min	Regeneration vs. Repair
15 min	Phases of Tissue Repair: Hemostasis, Inflammation, Proliferation, Remodeling
10 min	Role of Growth Factors and Extracellular Matrix
10 min	Factors Affecting Repair (Local & Systemic)
5 min	Complications: Keloid, Hypertrophic scar, Contracture, Dehiscence
5 min	Summary and Q&A

Teaching Aids

- PowerPoint presentation
- Whiteboard
- Histopathology images
- Clinical photographs

Formative Assessment

- Short oral questions
- MCQs (3–5)
- Case-based discussion

Expected Learning Outcome

Students will understand the mechanisms of tissue repair and apply the concepts to common pathological conditions.

Lecture: Wound Healing

Duration: 1 Hour

Learning Objectives

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

1. Define wound healing.
2. Describe healing by primary and secondary intention.
3. Explain the stages of wound healing.
4. Identify factors influencing wound healing.
5. Recognize complications of wound healing.

Lecture Outline

Time	Topic
5 min	Introduction to wound healing
10 min	Healing by Primary vs. Secondary Intention
20 min	Stages of Wound Healing: Inflammatory, Proliferative, Maturation
10 min	Factors Affecting Wound Healing (Nutrition, Infection, Diabetes, Blood Supply, Steroids, Age)
10 min	Complications: Infection, Ulcer, Excessive Scarring, Keloid, Contracture
5 min	Summary and Q&A

Teaching Aids

- PowerPoint presentation
- Whiteboard
- Histopathology slides
- Clinical images of wounds

Formative Assessment

- Short-answer questions
- MCQs (3–5)
- Clinical case discussion

Expected Learning Outcome

Students will be able to explain the mechanisms of wound healing, distinguish different types of healing, and correlate pathological changes with clinical scenarios.

Cellular Injury : Lecture Lesson Plan

Lecture 1: Introduction, Causes & Mechanisms of Cell Injury

Learning objectives: By the end, students should be able to explain why cells become injured, classify causes, and describe the basic mechanisms.

Time	Topic
0–5 min	Introduction: cellular homeostasis and adaptation vs injury
5–15 min	Causes of cell injury: hypoxia/ischemia, physical agents, chemicals/drugs, infections, immune reactions, genetic defects, nutritional imbalance
15–25 min	Cellular targets of injury: mitochondria, membranes, ATP generation, calcium homeostasis, DNA/proteins
25–40 min	Major mechanisms: ATP depletion, mitochondrial damage, calcium influx, oxidative stress, membrane permeability defects
40–50 min	Reactive oxygen species (ROS): generation, oxidative stress, antioxidant defenses
50–55 min	Ischemic injury—brief clinical correlation
55–60 min	Recap + short-answer questions

Key concepts:

Homeostasis → stress → reversible injury → irreversible injury → cell death.

Lecture 2: Reversible Cell Injury & Irreversible Injury

Learning objectives: Students should distinguish reversible from irreversible injury and describe their morphological changes.

Time	Topic
0–5 min	Recap of Lecture 1
5–20 min	Reversible cell injury: ATP depletion, cellular swelling, fatty change
20–30 min	Morphological changes: membrane blebbing, ER dilation, mitochondrial swelling, ribosomal detachment
30–40 min	Irreversible cell injury: critical mitochondrial dysfunction and severe membrane damage
40–50 min	Nuclear changes: pyknosis, karyorrhexis, karyolysis
50–55 min	Reversible vs irreversible injury—comparison
55–60 min	Case-based discussion + recap

High-yield distinction:

- **Reversible:** decreased ATP, cellular swelling, fatty change.
 - **Irreversible:** inability to reverse mitochondrial dysfunction + profound membrane damage.
-

Lecture 3 : Cell Death — Necrosis, Apoptosis & Other Forms

Learning objectives: Students should classify cell death, differentiate necrosis from apoptosis, and recognize their major morphological and biochemical features.

Time	Topic
0–5 min	Recap + transition from injury to cell death
5–20 min	Necrosis: definition, causes and general morphology
20–35 min	Patterns of necrosis: coagulative, liquefactive, caseous, fat, fibrinoid and gangrenous necrosis
35–48 min	Apoptosis: physiological vs pathological apoptosis; intrinsic and extrinsic pathways
48–53 min	Necrosis vs apoptosis
53–57 min	Other forms: autophagy and brief introduction to necroptosis
57–60 min	Final recap + MCQs/viva questions

Must-know MBBS outcomes

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

1. List the major causes of cellular injury.
2. Explain the mechanisms of cell injury.
3. Describe ATP depletion, mitochondrial damage, calcium influx and oxidative stress.
4. Differentiate **reversible and irreversible injury**.
5. Describe the morphological changes of reversible injury.
6. Explain the nuclear changes associated with cell death.
7. Classify and identify the major patterns of **necrosis**.
8. Explain the pathways and significance of **apoptosis**.
9. Compare **necrosis and apoptosis** in a clinical/pathological scenario.
10. Apply the concepts to common examples such as **myocardial infarction, cerebral infarction and viral hepatitis**.

Lesson Plan: Edema: Lecture 1

Subject: Pathology

Level: MBBS

Reference: Robbins Basic Pathology

Duration: 60 minutes

Learning objectives:

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

- Define edema and effusion.
- Explain the mechanisms of edema.
- Differentiate transudate and exudate.
- Describe important types and clinical consequences of edema.

Lesson sequence:

Time	Topic
0–5 min	Definition and introduction to edema
5–15 min	Normal fluid exchange and Starling forces
15–30 min	Mechanisms of edema: $\uparrow$ hydrostatic pressure, $\downarrow$ plasma oncotic pressure, lymphatic obstruction, Na^+ /water retention, inflammation
30–40 min	Transudate vs exudate
40–50 min	Types: subcutaneous, pulmonary, cerebral edema
50–55 min	Clinical examples: CHF, nephrotic syndrome, cirrhosis
55–60 min	Recap + 5 MCQs/oral questions

Take-home:

Edema results from disruption of normal movement of fluid between the vascular and interstitial compartments

Lesson Plan: Electrolyte Disorders: Lecture 2

Subject: Pathology

Level: MBBS

Reference: Robbins Basic Pathology

Duration: 60 minutes

Learning objectives

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

- Describe normal distribution of body water and major electrolytes.
- Explain the basic mechanisms of electrolyte imbalance.
- Describe hyponatremia and hypernatremia.
- Describe hypokalemia and hyperkalemia.
- Recognize major clinical consequences.

Lesson sequence

Time	Topic
0–5 min	Introduction: body water and electrolytes
5–15 min	ECF vs ICF; Na ⁺ and K ⁺ distribution
15–30 min	Sodium disorders: hyponatremia and hypernatremia
30–45 min	Potassium disorders: hypokalemia and hyperkalemia
45–52 min	Causes and pathological effects
52–57 min	Integrated clinical cases
57–60 min	Recap + short assessment 5 questions

Lesson Plan (1 Hour)

Topic: Embolism and Infarction

Learning Outcomes

By the end of the session, students should be able to:

1. Define embolism and infarction.
2. Classify the different types of emboli.
3. Explain the pathogenesis and morphology of infarction.
4. Differentiate between red and white infarcts.
5. Correlate embolism and infarction with common clinical conditions such as pulmonary embolism, myocardial infarction, and cerebral infarction.

Time	Content
5 min	Introduction • Definition of embolism and infarction• Relationship with thrombosis and ischemia
15 min	Embolism • Definition and pathogenesis• Types: Thromboembolism, Fat embolism, Air embolism, Amniotic fluid embolism, Cholesterol embolism• Pulmonary vs systemic thromboembolism• Clinical features and complications
20 min	Infarction • Definition and causes• Types: White (anemic) and Red (hemorrhagic) infarcts• Factors influencing infarct development (vascular supply, rate of occlusion, tissue

Time	Content
	vulnerability, oxygen content)• Morphology and healing
10 min	Clinicopathological Correlation • Pulmonary embolism leading to lung infarction• Myocardial infarction• Cerebral infarction• Brief discussion of diagnosis and prevention
5 min	Summary & Assessment • Key take-home messages• Short MCQs and oral questions
5 min	Feedback

Teaching Aids

- PowerPoint presentation
- Whiteboard and markers
- Gross pathology and histopathology images
- Flowcharts and diagrams
- Clinical case scenarios

Assessment

- Oral questioning during the lecture
- 5–10 MCQs at the end of the session
- Discussion of one short clinical case (e.g., pulmonary thromboembolism leading to lung infarction)

Topic: Hyperemia and Congestion

Lesson Plan: Large Group Teaching (Lecture)

Duration: 1 Hour

Learning Objectives

By the end of the session, students should be able to:

- Define hyperemia and congestion.
- Differentiate between active hyperemia and passive congestion.
- Explain the pathogenesis of congestion.
- Describe gross and microscopic features of acute and chronic congestion.
- Discuss the clinical significance and complications.

Teaching Methods

- Interactive lecture
- PowerPoint presentation
- Histopathology image discussion
- Question-answer session

Teaching Aid

- LCD projector
- Whiteboard
- Histopathology slides/images
- Pointer

Lesson Breakdown

Time	Content	Teaching Method
5 min	Introduction and learning objectives	Discussion
10 min	Definition of hyperemia and congestion; causes	Lecture
15 min	Pathogenesis; differences between hyperemia and congestion	PPT + Board
15 min	Gross and microscopic morphology (lung, liver, spleen)	Histology images
10 min	Clinical significance and complications	Interactive discussion
5 min	Summary and formative assessment	MCQs & Q/A

Assessment

- Differentiate hyperemia from congestion.
- Why does chronic passive congestion produce "nutmeg liver"?
- Describe microscopic changes in chronic pulmonary congestion.

Take-home Message

Hyperemia is an active process due to increased arterial inflow, whereas congestion is a passive process caused by impaired venous outflow and may lead to tissue hypoxia and fibrosis.

Topic: Haemorrhage and Shock

Lesson Plan : Large Group Teaching (Lecture)

Duration: 1 Hour

Learning Objectives

By the end of the session, students should be able to:

- Define haemorrhage and classify its types.
- Explain causes and consequences of haemorrhage.
- Define shock and classify its major types.
- Describe the pathogenesis and stages of shock.
- Discuss pathological changes and complications of shock.

Teaching Methods

- Interactive lecture
- Clinical case discussion
- PowerPoint presentation
- Question-answer session

Teaching Aids

- LCD projector
- Whiteboard
- Clinical case scenarios
- Histopathology images

Lesson Breakdown

Time	Content	Teaching Method
5 min	Introduction and objectives	Discussion
10 min	Definition, classification and causes of haemorrhage	Lecture
10 min	Clinical effects and consequences of haemorrhage	Interactive lecture
15 min	Definition, classification and pathogenesis of shock	PPT
15 min	Stages, morphology and complications of shock	Case discussion
5 min	Summary and formative assessment	MCQs & Q/A

Assessment

- Classify haemorrhage with examples.
- Enumerate the types of shock.
- Explain the stages of septic shock.
- Mention pathological changes seen in shock.

Take-home Message

Haemorrhage can produce significant local and systemic effects depending on volume and site, while shock is a life-threatening state of systemic hypoperfusion that requires prompt recognition and management to prevent irreversible organ damage.

Lesson Plan (1 Hour)

Topic: Thrombosis

Learning Objectives

By the end of the session, students should be able to:

- 1. Define thrombosis and thrombus.
- 2. Explain the pathogenesis of thrombosis using Virchow's triad.
- 3. Describe the morphology of arterial and venous thrombi.
- 4. Discuss the fate and clinical consequences of thrombi.
- 5. Apply knowledge to common clinical scenarios.

Lesson Schedule (60 Minutes)

Time	Content
0–5 min	Introduction: Definition of thrombosis and normal haemostasis
5–20 min	Pathogenesis: Virchow's Triad - Endothelial injury, Abnormal blood flow (stasis/turbulence), Hypercoagulability
20–35 min	Morphology of thrombi: Arterial vs venous thrombi, Lines of Zahn, Antemortem vs postmortem clot
35–45 min	Fate of thrombus: Propagation, Embolization, Dissolution, Organization and recanalization
45–55 min	Clinical significance: Deep vein thrombosis (DVT), Pulmonary embolism, Myocardial infarction, Stroke
55–60 min	Summary, Key Take-home Messages & MCQs

Teaching Aids

- PowerPoint presentation
 - Histopathology and gross specimen images
 - Whiteboard and markers
 - Clinical case scenarios
-

Assessment

Formative Assessment (5 MCQs):

1. Name the three components of Virchow's triad.
 2. Which thrombus commonly shows Lines of Zahn?
 3. What is the most common cause of venous thrombosis?
 4. List two possible fates of a thrombus.
 5. What is the most serious complication of DVT?
-

Key Take-home Messages

- Thrombosis is the pathological formation of a blood clot within vessels.
- Virchow's triad is the cornerstone of thrombosis pathogenesis.
- Arterial thrombi are platelet-rich, while venous thrombi are fibrin and RBC-rich.
- Pulmonary embolism is a major life-threatening complication of venous thrombosis.
- Early recognition and prevention of thromboembolic disease reduce morbidity and mortality.

Lesson Plan: Cellular Adaptation

Topic: Cellular Adaptation

General Pathology

Duration: 1 Hour

Time	Content
0–5 min	Introduction: Definition of cellular adaptation, causes (physiological vs pathological stress), learning objectives
5–15 min	Atrophy: Definition, causes, mechanisms, examples (disuse, denervation, ischemia, aging)
15–25 min	Hypertrophy & Hyperplasia: Definitions, mechanisms, physiological and pathological examples, differences
25–35 min	Metaplasia: Definition, causes, mechanisms, examples (smokers' bronchus, Barrett esophagus), clinical significance
35–45 min	Dysplasia: Definition, features, causes, distinction from metaplasia, relation to malignancy
45–55 min	Summary & Comparison: Differences among atrophy, hypertrophy, hyperplasia, metaplasia, and dysplasia; clinical correlations
55–60 min	Assessment & Wrap-up: 5 MCQs, Q&A, key take-home messages

Learning Objectives

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

1. Define cellular adaptation.
2. Describe the types of cellular adaptation.
3. Explain the mechanisms and causes of atrophy, hypertrophy, hyperplasia, metaplasia, and dysplasia.
4. Differentiate between physiological and pathological adaptations.
5. Apply the concepts to common clinical scenarios.

Teaching Aids

- PowerPoint presentation
- Whiteboard
- Histopathology images
- Comparison charts
- Clinical case vignettes

Formative Assessment (Sample MCQs)

1. Which cellular adaptation is characterized by an increase in cell size?
2. Which adaptation is reversible replacement of one adult cell type by another?
3. Benign prostatic enlargement is an example of which adaptation?
4. Dysplasia is most commonly associated with:
5. Skeletal muscle enlargement after exercise is an example of:

Take-Home Messages

- Cellular adaptation helps cells survive stress.
- The four classic adaptations are **atrophy, hypertrophy, hyperplasia, and metaplasia**.
- **Dysplasia** is an abnormal growth pattern and is considered **pre-malignant**, not a true adaptive response.
- Persistent stress beyond adaptive capacity leads to **cell injury and cell death**.

Lesson Plan: Lecture

Pigments and Calcification

Duration: 1 Hour

Subject: General Pathology

Learning Objectives

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

1. Classify pigments into endogenous and exogenous types.
 2. Describe the causes, morphology, and significance of major pigments.
 3. Differentiate between dystrophic and metastatic calcification.
 4. Explain the pathogenesis and clinical importance of pathological calcification.
 5. Apply knowledge to common clinical scenarios.
-

Lecture Schedule (60 Minutes)

1. Introduction (5 minutes)

- Definition of pigments and calcification
 - Importance in pathology and clinical diagnosis
-

2. Pigments (25 minutes)

A. Classification (3 min)

- Endogenous pigments
- Exogenous pigments

B. Endogenous Pigments (12 min)

- Lipofuscin
- Melanin
- Hemosiderin
- Bilirubin

For each:

- Source
- Pathogenesis
- Histological appearance
- Clinical significance

C. Exogenous Pigments (5 min)

- Carbon (Anthracosis)
- Tattoo pigments

D. Summary & Clinical Correlation (5 min)

- Hemochromatosis
 - Jaundice
 - Anthracosis
-

3. Pathological Calcification (20 minutes)

A. Definition (2 min)

B. Types (12 min)

Dystrophic Calcification

- Occurs in dead or damaged tissue
- Normal serum calcium
- Examples:
 - Atherosclerosis
 - Tuberculosis
 - Damaged heart valves

Metastatic Calcification

- Occurs in normal tissues
- Hypercalcemia
- Causes:
 - Hyperparathyroidism
 - Vitamin D excess
 - Bone destruction
 - Chronic renal failure

C. Morphology & Clinical Importance (4 min)

- Gross appearance
- Microscopy
- Complications

D. Comparison Table (2 min)

Dystrophic	Metastatic
Damaged tissue	Normal tissue
Normal calcium	High calcium
Localized	Widespread

4. Wrap-up & Assessment (10 minutes)

Quick Revision (5 min)

- Endogenous vs exogenous pigments
- Dystrophic vs metastatic calcification

Interactive Questions (5 min)

1. Name two endogenous pigments.
 2. Which pigment accumulates in iron overload?
 3. What type of calcification occurs in a tuberculous lymph node?
 4. Give two causes of metastatic calcification.
 5. Why is anthracosis common in smokers?
-

Teaching Methods

- PowerPoint presentation
- Histopathology images
- Clinical case discussion
- Question–answer session

Teaching Aids

- Projector
- Histology slides/images
- Whiteboard

Lesson Plan: Neoplasia – Lecture 1

Topic: Nomenclature and Classification of Neoplasms

Duration: 1 hour

Learning Objectives

By the end of the session, students should be able to:

1. Define neoplasia and neoplasm.
2. Explain the principles of tumour nomenclature.
3. Classify tumours according to tissue of origin.
4. Differentiate benign and malignant terminology.

Teaching Methods

- Interactive lecture
- PowerPoint presentation
- Question–answer session

Teaching Aids

- PowerPoint slides
- Whiteboard
- Histopathology images

Lesson Breakdown

Time	Content	Teaching Strategy
5 min	Introduction and definition of neoplasia	Lecture
15 min	Principles of tumour nomenclature	Interactive discussion
20 min	Classification of epithelial, mesenchymal, hematopoietic and germ cell tumours	Lecture with diagrams
10 min	Examples of common benign and malignant tumours	Clinical examples
5 min	Summary	Recap
5 min	MCQs and questions	Formative assessment

Assessment

- Oral questioning
- Five MCQs

Expected Outcome

Students will correctly classify common neoplasms and apply standard nomenclature.

Lesson Plan: Neoplasia: Lecture 2

Topic: Characteristics of Benign and Malignant Tumours, Metastasis

Duration: 1 hour

Learning Objectives

By the end of the class students should be able to:

1. Compare benign and malignant tumours.
2. Describe local invasion and metastatic spread.
3. Explain the pathways of metastasis.
4. Identify factors influencing metastatic potential.

Teaching Methods

- Interactive lecture
- Case discussion
- Question–answer

Teaching Aids

- PowerPoint
- Whiteboard
- Histopathology images

Lesson Breakdown

Time	Content	Teaching Strategy
5 min	Review of previous class	Discussion
20 min	Differences between benign and malignant tumours (growth, differentiation, invasion, recurrence)	Lecture
20 min	Metastasis: lymphatic, hematogenous and transcoelomic spread	Diagrams and flowcharts
10 min	Clinical examples (breast carcinoma, colon carcinoma, osteosarcoma)	Case discussion
5 min	Quiz and summary	MCQs

Assessment

- Short oral questions
- Five MCQs

Expected Outcome

Students will distinguish benign from malignant tumours and explain mechanisms of metastasis.

Lesson Plan Neoplasia, Lecture 3

Topic: Genetic Predisposition and Hereditary Cancer Syndromes

Duration: 1 hour

Learning Objectives

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

1. Explain hereditary susceptibility to cancer.
2. Describe inherited cancer syndromes.
3. Discuss inherited mutations affecting tumour suppressor genes.
4. Relate genetic predisposition to clinical practice.

Teaching Methods

- Interactive lecture
- Clinical case discussion
- Question–answer

Teaching Aids

- PowerPoint
- Pedigree charts
- Whiteboard

Lesson Breakdown

Time	Content	Teaching Strategy
5 min	Introduction	Lecture
15 min	Familial cancers and inherited susceptibility	Interactive lecture
20 min	Hereditary syndromes: RB, Li-Fraumeni, FAP, BRCA, MEN	Clinical examples
10 min	Clinical implications, screening and counselling	Discussion
5 min	Summary	Recap
5 min	MCQs	Assessment

Assessment

- Oral questions
- Five MCQs

Expected Outcome

Students will recognise major hereditary cancer syndromes and understand their pathological basis.

Lesson Plan: Neoplasia, Lecture 4

Topic: Molecular Basis of Cancer

Duration: 1 hour

Learning Objectives

By the end of the class students should be able to:

1. Explain the molecular basis of carcinogenesis.
2. Describe the roles of oncogenes and tumour suppressor genes.
3. Discuss apoptosis-regulating genes and DNA repair genes.
4. Understand the hallmarks of cancer.

Teaching Methods

- Interactive lecture
- Flowchart-based teaching
- Question–answer

Teaching Aids

- PowerPoint
- Whiteboard

Lesson Breakdown

Time	Content	Teaching Strategy
5 min	Introduction	Lecture
15 min	Oncogenes (RAS, MYC, HER2)	Interactive lecture
15 min	Tumour suppressor genes (TP53, RB, APC)	Diagrams
10 min	DNA repair genes, apoptosis, epigenetic changes	Flowcharts
10 min	Hallmarks of cancer and targeted therapy overview	Discussion
5 min	Summary and MCQs	Assessment

Assessment

- Five MCQs
- Oral questioning

Expected Outcome

Students will explain the molecular mechanisms underlying cancer development and correlate them with modern concepts of targeted therapy.

Lesson Plan: Neoplasia – Lecture 5

Topic: Carcinogenesis (Part I): Introduction, Etiology & Chemical Carcinogenesis

Duration: 1 Hour

Learning Objectives

At the end of the lecture, students should be able to:

1. Define carcinogenesis.
2. Describe the multistep process of carcinogenesis.
3. Classify carcinogens.
4. Explain chemical carcinogenesis with examples.
5. Discuss environmental and occupational carcinogens.

Teaching Methods

- Interactive lecture
- PowerPoint presentation
- Question-answer session

Teaching Aids

- Multimedia projector
- Whiteboard
- Histopathology images
- Flowcharts

Lesson Breakdown

Time	Content
5 min	Introduction to neoplasia and carcinogenesis
10 min	Definition and stages of carcinogenesis (Initiation, Promotion, Progression)
15 min	Chemical carcinogenesis: Direct-acting and indirect-acting carcinogens
10 min	Examples of chemical carcinogens (Aflatoxin, Tobacco smoke, Aromatic amines, Asbestos, Vinyl chloride)
10 min	Environmental and occupational carcinogens
5 min	Summary
5 min	MCQs and discussion

Formative Assessment

- Five MCQs
- Oral questioning
- Short case discussion

References

- Robbins & Cotran Pathologic Basis of Disease (11th Edition)
- Harsh Mohan Textbook of Pathology

Lesson Plan: Neoplasia: Lecture 6

Topic: Carcinogenesis (Part II): Molecular Basis, Viral Carcinogenesis & Hallmarks of Cancer

Duration: 1 Hour

Learning Objectives

At the end of the lecture, students should be able to:

1. Explain the molecular basis of carcinogenesis.
2. Describe oncogenes, tumour suppressor genes and apoptosis-regulating genes.
3. Discuss DNA repair defects in cancer.
4. Explain viral carcinogenesis.
5. Describe the hallmarks of cancer.

Teaching Methods

- Interactive lecture
- Multimedia presentation
- Clinical correlation
- Question-answer session

Teaching Aids

- PowerPoint slides
- Whiteboard
- Molecular pathway diagrams
- Clinical photographs

Lesson Breakdown

Time	Content
5 min	Recap of previous lecture
15 min	Molecular basis: Oncogenes (RAS, MYC), Tumour suppressor genes (TP53, RB), Apoptosis genes (BCL2)
10 min	DNA repair genes (BRCA1, BRCA2, Mismatch repair genes)
10 min	Viral carcinogenesis (HPV, EBV, HBV, HCV, HTLV-1, HHV-8)
10 min	Hallmarks of cancer and tumour progression
5 min	Clinical correlations and recent advances (targeted therapy overview)
5 min	Summary and MCQs

Formative Assessment

- Five MCQs
- Short-answer questions
- Oral viva

References

- Robbins & Cotran Pathologic Basis of Disease (11th Edition)
- Harsh Mohan Textbook of Pathology
- WHO Classification of Tumours (latest edition)

Lesson Plan: Neoplasia – Lecture 7

Duration: 1 Hour

Learning Objectives

By the end of the session, students should be able to:

1. Describe the mechanisms of tumour immunity and immune evasion.
2. Discuss the clinical manifestations and systemic effects of neoplasia.
3. Explain the laboratory methods used in the diagnosis of tumours.
4. Differentiate between tumour grading and staging and describe the TNM classification.

Time	Content	Teaching Aids
0–5 min	Introduction: Brief recap of neoplasia and learning objectives	PowerPoint slides, whiteboard
5–15 min	Tumour Immunity: Tumour antigens, immune surveillance, role of T cells, NK cells, macrophages, immune evasion by tumours, basics of immunotherapy	Diagrams, flowcharts
15–25 min	Clinical Aspects of Neoplasia: Local and systemic effects, cachexia, paraneoplastic syndromes, tumour markers, screening and prognosis	Clinical images, PPT
25–45 min	Laboratory Diagnosis of Tumours: Cytology (FNAC), biopsy, histopathology, frozen section, immunohistochemistry, molecular diagnostics, serum tumour markers	Histopathology slides, diagrams

Time	Content	Teaching Aids
45–55 min	Grading and Staging of Tumours: Principles of tumour grading, TNM staging system, importance in prognosis and treatment planning	TNM charts, clinical cases
55–60 min	Summary & Assessment: Recap, MCQs, short questions, doubt clearing	Whiteboard, PPT

Teaching-Learning Methods

- Interactive lecture
- Case-based discussion
- Question–answer session
- Formative assessment (MCQs)

Assessment

- 5 MCQs at the end of the class
- Oral questioning during the session

Recommended Reading

- Robbins & Cotran Pathologic Basis of Disease – Chapter on Neoplasia
- Robbins Basic Pathology – Neoplasia chapter

Lesson Plan: Genetic diseases: Lecture 1

Topic: Introduction to Genetics and Chromosomal Disorders

Duration: 1 Hour

Time	Teaching Content
5 min	Introduction: Importance of genetics in pathology
10 min	Basic genetic concepts: DNA, genes, chromosomes, genome
15 min	Chromosomal abnormalities: Numerical (trisomy, monosomy) and structural (deletion, translocation, inversion)
15 min	Common chromosomal disorders: Down syndrome, Turner syndrome, Klinefelter syndrome
10 min	Diagnostic techniques: Karyotyping, FISH, PCR, Chromosomal microarray
5 min	Summary and formative assessment (MCQs/Q&A)

Teaching Aids: PowerPoint slides, whiteboard, karyotype images

Learning Outcomes:

- Define basic genetic terminology.
 - Classify chromosomal abnormalities.
 - Explain the pathology of common chromosomal disorders.
 - Describe commonly used genetic diagnostic tests.
-

Lesson Plan: Genetic diseases: Lecture 2

Topic: Single-Gene Disorders and Molecular Genetics

Duration: 1 Hour

Time	Teaching Content
5 min	Introduction to molecular genetics in pathology
15 min	Patterns of inheritance: Autosomal dominant, autosomal recessive, X-linked inheritance
15 min	Examples of single-gene disorders: Sickle cell disease, Cystic fibrosis, Thalassemia, Hemophilia
10 min	Types of gene mutations: Missense, nonsense, frameshift, trinucleotide repeat expansion
10 min	Molecular diagnostic techniques: PCR, DNA sequencing, Next-Generation Sequencing (NGS)
5 min	Summary, MCQs, and discussion

Teaching Aids: PowerPoint slides, pedigree charts, mutation diagrams

Learning Outcomes:

- Describe Mendelian patterns of inheritance.
- Explain the molecular basis of common single-gene disorders.
- Classify different types of gene mutations.
- Discuss the role of molecular diagnostic techniques in pathology.

Lesson Plan: Lecture

Topic: Infectious Diseases

Duration: 1 Hour

Teaching Method: Interactive Lecture with PowerPoint, Histopathology Images & Case Discussion

Time	Content
5 min	Introduction: Definition, classification of infectious diseases (bacterial, parasitic, fungal), host-pathogen interaction, granulomatous inflammation
20 min	Tuberculosis: Etiology (<i>Mycobacterium tuberculosis</i>), pathogenesis, primary & secondary TB, granuloma formation, caseous necrosis, morphology, complications, laboratory diagnosis
12 min	Leprosy: Etiology (<i>Mycobacterium leprae</i>), transmission, Ridley–Jopling classification, tuberculoid vs lepromatous leprosy, pathology, clinical correlation
10 min	Hydatid Cyst: Etiology (<i>Echinococcus granulosus</i>), life cycle, pathology of hydatid cyst, morphology, complications (rupture, anaphylaxis), diagnosis
8 min	Rhinosporidiosis: Etiology (<i>Rhinosporidium seeberi</i>), epidemiology, pathology, morphology, clinical features, diagnosis
5 min	Summary & Assessment: Key points, MCQs, short questions, Q&A

Specific Learning Outcomes

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

1. Classify infectious diseases based on etiology.
2. Explain the pathology and morphology of tuberculosis.
3. Differentiate tuberculoid and lepromatous leprosy.
4. Describe the pathology, morphology and complications of hydatid cyst.
5. Explain the pathological features and diagnosis of rhinosporidiosis.
6. Correlate histopathological findings with clinical presentation.

Teaching Aids

- Multimedia projector (PowerPoint)
- Gross pathology photographs
- Histopathology slides (TB granuloma, leprosy lesions, hydatid cyst, rhinosporidiosis)
- Whiteboard and markers

Assessment

- 5 MCQs
- 2 Short Answer Questions (SAQs)
- Oral questioning during the session

Recommended References

1. Robbins & Cotran *Pathologic Basis of Disease*, 11th Edition.

Lesson Plan: Immunopathology: Lecture 1

Topic: Hypersensitivity Reactions (Types I–IV)

Duration: 1 Hour

Learning Objectives

By the end of the lecture, students will be able to:

1. Define hypersensitivity.
2. Classify hypersensitivity reactions according to Gell and Coombs.
3. Explain the mechanisms of Types I–IV hypersensitivity.
4. Describe common clinical examples of each type.

Teaching Methods

- Interactive lecture
- PowerPoint presentation
- Clinical case discussion
- Question-answer session

Teaching Materials

- Multimedia projector
- Whiteboard and markers
- Flowcharts and diagrams

Lesson Breakdown

Time	Content
5 min	Introduction to immunity and hypersensitivity
15 min	Type I hypersensitivity: mechanism, mediators, examples (anaphylaxis, asthma)
15 min	Type II & III hypersensitivity: antibody-mediated and immune complex diseases
15 min	Type IV hypersensitivity: T-cell mediated reactions, tuberculosis, contact dermatitis
5 min	Summary of differences among the four types
5 min	Questions and formative assessment

Assessment

- Short MCQs
- Oral questioning
- Clinical scenario-based discussion

Recommended Reading

- Robbins & Cotran Pathologic Basis of Disease (Latest Edition)
 - Harsh Mohan: Textbook of Pathology
-

Lesson Plan: Immunopathology: Lecture 2

Topic: Autoimmune Diseases and Amyloidosis

Duration: 1 Hour

Learning Objectives

By the end of the lecture, students will be able to:

1. Define autoimmunity and autoimmune disease.
2. Explain the mechanisms responsible for loss of self-tolerance.
3. Discuss major autoimmune diseases with examples.
4. Describe amyloidosis, its classification, pathogenesis, morphology, and clinical significance.

Teaching Methods

- Interactive lecture
- PowerPoint presentation
- Clinical case discussion
- Question-answer session

Teaching Materials

- LCD projector
- Whiteboard
- Histopathology images
- Flowcharts

Lesson Breakdown

Time	Content
5 min	Introduction to autoimmunity
15 min	Mechanisms of autoimmune diseases and loss of self-tolerance
15 min	Systemic and organ-specific autoimmune diseases (SLE, RA, Hashimoto thyroiditis, Type 1 DM)
15 min	Amyloidosis: classification, pathogenesis, morphology, diagnosis, clinical features
5 min	Summary and key points
5 min	Questions and formative assessment

Assessment

- Short-answer questions
- MCQs
- Clinical case-based discussion

Recommended Reading

- Robbins & Cotran Pathologic Basis of Disease (Latest Edition)

Lesson Plan: Environmental diseases and Hazards: Lecture 1

Topic: Air Pollution, Tobacco-Related Diseases, and Occupational Lung Diseases

Duration: 1 Hour

Learning Objectives

At the end of the session, students will be able to:

1. Define environmental diseases and hazards.
2. Describe the pathological effects of air pollution and tobacco smoke.
3. Explain the pathogenesis and pathology of occupational lung diseases.
4. Correlate pathological findings with clinical manifestations.

Teaching-Learning Methods

- Interactive lecture (PowerPoint)
- Discussion with clinical examples
- Histopathology images

Teaching Plan

Time	Content
5 min	Introduction to environmental diseases and hazards
15 min	Air pollution: sources, particulate matter, ozone, health effects
15 min	Tobacco-related diseases: COPD, lung cancer, cardiovascular effects
15 min	Occupational lung diseases: Pneumoconiosis (silicosis, asbestosis, coal workers' pneumoconiosis), byssinosis
5 min	Summary and key points
5 min	MCQs and Question-Answer session

Teaching Aids

- Multimedia projector
- PowerPoint slides
- Histopathology images
- Whiteboard

Assessment

- Oral questioning
- Five MCQs
- Image-based identification

Recommended Reading

- Robbins & Cotran Pathologic Basis of Disease (Latest Edition)
 - Harsh Mohan Textbook of Pathology
-

Lesson Plan: Environmental diseases and Hazards: Lecture 2 Topic: Physical and Chemical Environmental Hazards

Duration: 1 Hour

Learning Objectives

At the end of the session, students will be able to:

1. Describe the effects of physical environmental hazards.
2. Explain radiation injury and radiation-induced neoplasms.
3. Discuss chemical hazards including heavy metals and toxic agents.
4. Understand preventive measures against environmental hazards.

Teaching-Learning Methods

- Interactive lecture
- Clinical case discussion
- PowerPoint presentation

Teaching Plan

Time	Content
5 min	Introduction to physical and chemical hazards
15 min	Physical hazards: heat, cold, electrical injury, pressure changes
15 min	Radiation pathology: UV radiation, ionising radiation, acute and chronic effects, radiation-induced cancers
15 min	Chemical hazards: lead, mercury, arsenic, carbon monoxide, alcohol, pesticides
5 min	Summary
5 min	MCQs and Question-Answer session

Teaching Aids

- Multimedia projector
- PowerPoint slides
- Whiteboard
- Clinical photographs/diagrams

Assessment

- Oral questions
- Five MCQs
- Short case discussion

Recommended Reading

- Robbins & Cotran Pathologic Basis of Disease (Latest Edition)
- Harsh Mohan Textbook of Pathology

Lesson Plan: Nutritional Disorders: Lecture 1

Topic: Protein-Energy Malnutrition (PEM)

Duration: 1 Hour

Learning Objectives

At the end of the session, students will be able to:

1. Define protein-energy malnutrition.
2. Classify different types of PEM.
3. Explain the pathogenesis of marasmus and kwashiorkor.
4. Describe morphological and clinical features.
5. Discuss complications and prevention.

Teaching-Learning Methods

- Interactive lecture
- PowerPoint presentation
- Clinical case discussion

Teaching Aids

- LCD projector
- Whiteboard and markers
- Histopathology images
- Clinical photographs

Lesson Breakdown

Time	Content
5 min	Introduction, definition, global burden
10 min	Classification of PEM and causes
15 min	Pathogenesis of marasmus and kwashiorkor
15 min	Morphology, clinical features, complications
10 min	Prevention, management principles, case discussion
5 min	Summary and formative assessment

Assessment

- Oral questions
- Short MCQs

References

- Robbins & Cotran Pathologic Basis of Disease (Latest Edition)
 - Harsh Mohan Textbook of Pathology
-

Lesson Plan: Nutritional Disorders: Lecture 2

Topic: Vitamin and Mineral Deficiency Disorders

Duration: 1 Hour

Learning Objectives

At the end of the session, students will be able to:

1. Classify vitamin and mineral deficiencies.
2. Explain the pathology of common vitamin deficiencies (A, D, C, B12, Folate).
3. Describe important mineral deficiencies (iron and iodine).
4. Correlate pathological changes with clinical manifestations.
5. Discuss preventive strategies.

Teaching-Learning Methods

- Interactive lecture
- PowerPoint presentation
- Case-based discussion

Teaching Aids

- LCD projector
- Whiteboard and markers
- Charts and histopathology images

Lesson Breakdown

Time	Content
5 min	Introduction and classification
20 min	Fat-soluble and water-soluble vitamin deficiencies
15 min	Iron deficiency anaemia and iodine deficiency disorders
10 min	Pathological features, diagnosis and prevention
5 min	Clinical case discussion
5 min	Summary and formative assessment

Assessment

- Oral questioning
- Short MCQs

References

- Robbins & Cotran Pathologic Basis of Disease (Latest Edition)
- Harsh Mohan Textbook of Pathology

Short Lesson Plan — Techniques in Cytopathology, Histopathology & Autopsy

MBBS Pathology | 1 Lecture

Duration: 60 minutes

Topic: Basic Techniques in Cytopathology, Histopathology and Autopsy

Learning Objectives

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

1. Describe the basic steps of specimen collection and processing.
2. Explain common cytopathology techniques.
3. Outline routine histopathology processing and staining.
4. Describe the basic procedure and purposes of autopsy.
5. Recognize common artifacts and their prevention.

Lecture Outline

Time	Topic	Key Points
5 min	Introduction	Definition and role of cytopathology, histopathology and autopsy
15 min	Cytopathology techniques	Exfoliative cytology, FNAC, smear preparation, fixation, staining, liquid-based cytology
25 min	Histopathology techniques	Specimen collection → fixation → grossing → tissue processing → dehydration → clearing → paraffin embedding → sectioning → staining
10 min	Autopsy	Types, indications, external examination, internal examination, organ sampling, histology and final report
5 min	Summary & questions	Key differences and important examination points

Important Take-Home Message

Cytopathology examines individual cells, histopathology examines tissue architecture, whereas autopsy provides a comprehensive examination of the body after death to establish disease processes and cause of death.

Lesson Plan: Lecture (1 Hour)

Topic: Diseases of Blood Vessels

Duration: 1 Hour

Learning Objectives

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

1. Classify diseases of blood vessels.
2. Describe the pathogenesis and morphology of atherosclerosis.
3. Explain the causes and complications of aneurysms and aortic dissection.
4. Classify major forms of vasculitis.
5. Describe vascular changes associated with hypertension.
6. Correlate pathological changes with clinical manifestations.

Time	Content
7 min	Objectives, Overview of blood vessel disorders: aneurysm, dissection, vasculitis, arteriosclerosis, atherosclerosis, hypertension-related vascular changes
10 min	Definitions, types of arteriosclerosis, pathogenesis of atherosclerosis, risk factors, morphology
10 min	Definition, causes, morphology, complications, clinical significance
10 min	Classification (large, medium, small vessel vasculitis), pathogenesis, key examples, clinical features
10 min	Hyaline and hyperplastic arteriolosclerosis, malignant hypertension, target organ damage
10 min	Complications: thrombosis, ischemia, infarction, hemorrhage; brief discussion of diagnostic methods
5 min	Recap, important examination points, take-home messages

Teaching Aids

- PowerPoint presentation
- Whiteboard and markers
- Histopathology slides/images
- Clinical photographs and diagrams

Lesson Plan: Diseases of Cardiovascular System: Lecture 1

Topic: Ischemic Heart Disease (IHD)

Duration: 1 hour

Learning Objectives

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

1. Define ischemic heart disease.
2. Describe the pathogenesis of myocardial ischemia.
3. Classify the clinical manifestations of IHD.
4. Explain the pathological changes in myocardial infarction.
5. Discuss the complications of myocardial infarction.

Teaching Schedule

Time	Content
5 min	Objectives, Introduction and epidemiology of IHD
15 min	Etiology and pathogenesis (atherosclerosis, thrombosis, risk factors)
15 min	Myocardial infarction: gross and microscopic pathology
15 min	Clinical features, diagnosis, biomarkers, complications
10 min	Summary, questions, and formative assessment

Teaching Aids

- PowerPoint presentation
- Histopathology slides
- Gross specimen photographs
- Whiteboard

Assessment

- Oral questions
- MCQs
- Case discussion

References

- Robbins & Cotran Pathologic Basis of Disease
- Harsh Mohan Textbook of Pathology

Lesson Plan: Diseases of Cardiovascular System: Lecture 2

Topic: Rheumatic Heart Disease and Infective Endocarditis

Duration: 1 hour

Learning Objectives

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

1. Explain the pathogenesis of rheumatic fever and rheumatic heart disease.
2. Describe the morphology of rheumatic heart disease.
3. Discuss infective endocarditis and its causative organisms.
4. Compare acute and subacute infective endocarditis.
5. Identify major pathological complications.

Teaching Schedule

Time	Content
5 min	Objectives, Introduction
15 min	Rheumatic fever and rheumatic heart disease
15 min	Morphology and complications
15 min	Infective endocarditis: pathology and complications
10 min	Summary and assessment

Teaching Aids

- PowerPoint slides
- Histopathology images
- Whiteboard

Assessment

- Oral questioning
- Short MCQs
- Clinical case discussion

References

- Robbins & Cotran Pathologic Basis of Disease
 - Harsh Mohan Textbook of Pathology
-

Lesson Plan: Diseases of Cardiovascular System: Lecture 3

Topic: Cardiomyopathies and Myocarditis

Duration: 1 hour

Learning Objectives

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

1. Classify cardiomyopathies.
2. Describe the pathology of dilated, hypertrophic, and restrictive cardiomyopathies.
3. Explain the causes and pathology of myocarditis.
4. Discuss complications and clinical significance.
5. Correlate pathological findings with clinical presentation.

Teaching Schedule

Time	Content
5 min	Introduction
15 min	Classification and etiology of cardiomyopathies
15 min	Gross and microscopic pathology
15 min	Myocarditis: causes, pathology, and complications
10 min	Summary, Q&A, and formative assessment

Teaching Aids

- PowerPoint presentation
- Histopathology slides
- Gross specimen images
- Whiteboard

Assessment

- MCQs
- Oral questions
- Clinical case discussion

References

- Robbins & Cotran Pathologic Basis of Disease
- Harsh Mohan Textbook of Pathology

Lesson Plan: Respiratory Pathology: Lecture 1 (1 Hour)

Topic: Pulmonary Edema, Acute Lung Injury (ALI), and Acute Respiratory Distress Syndrome (ARDS)

Learning Objectives

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

- Define pulmonary edema, ALI, and ARDS.
- Describe causes and pathogenesis.
- Explain gross and microscopic morphology.
- Correlate pathology with clinical manifestations.

Lecture Outline

Time	Content
10 min	Objectives, Normal lung structure and defense mechanisms
15 min	Pulmonary edema: causes, pathogenesis, morphology
20 min	ALI and ARDS: causes, diffuse alveolar damage, stages
10 min	Clinical features, investigations, prognosis
5 min	Summary and discussion

Teaching Methods

- PowerPoint lecture
- Histopathology images
- Clinical case discussion

Teaching Aids

- Robbins textbook
 - Digital slides
 - Whiteboard
 - **Assessment**
 - MCQs
 - Short oral questions
 - Identification of microscopic features
-

Lesson Plan: Respiratory Pathology: Lecture 2 (1 Hour)

Topic: Obstructive Lung Diseases (COPD, Emphysema, Chronic Bronchitis, Bronchial Asthma, Bronchiectasis)

Learning Objectives

Students should be able to:

- Classify obstructive lung diseases.
- Explain etiopathogenesis.
- Describe morphology and complications.
- Differentiate various obstructive disorders.

Lecture Outline

Time	Content
10 min	Classification of obstructive diseases
15 min	Emphysema and chronic bronchitis
15 min	Bronchial asthma
10 min	Bronchiectasis
10 min	Comparison, complications, questions

Teaching Methods

- Interactive lecture
- Flowcharts
- Clinical correlations

Teaching Aids

- PowerPoint
- Histology slides
- Whiteboard

Assessment

- MCQs
- SAQs
- Viva

Lesson Plan: Respiratory Pathology: Lecture 3 (1 Hour)

Topic: Restrictive Lung Diseases (Interstitial Lung Diseases)

Learning Objectives

Students should be able to:

- Define restrictive lung disease.
- Classify interstitial lung diseases.
- Explain idiopathic pulmonary fibrosis and pneumoconioses.
- Describe pathological changes.

Lecture Outline

Time	Content
10 min	Classification and overview
20 min	Idiopathic pulmonary fibrosis
15 min	Pneumoconioses (Coal workers, Silicosis, Asbestosis)
10 min	Clinical features and diagnosis
5 min	Summary

Teaching Methods

- Lecture
- Histopathology review
- Case-based discussion

Teaching Aids

- PowerPoint
- Robbins photomicrographs

Assessment

- MCQs
 - Slide identification
 - Viva
-

Lesson Plan: Respiratory Pathology: Lecture 4 (1 Hour)

Topic: Pulmonary Infections

Learning Objectives

Students should be able to:

- Classify pneumonias.
- Describe bacterial and viral pneumonia.
- Explain lung abscess and tuberculosis pathology.
- Discuss complications.

Lecture Outline

Time	Content
10 min	Classification of pulmonary infections
20 min	Lobar and bronchopneumonia
15 min	Atypical pneumonia and lung abscess
10 min	Pulmonary tuberculosis
5 min	Summary

Teaching Methods

- Interactive lecture
- Clinical case discussion
- Histopathology review

Teaching Aids

- PowerPoint
- Histology slides
- Whiteboard

Assessment

- MCQs
 - SAQs
 - Viva
-

Lesson Plan: Respiratory Pathology: Lecture 5 (1 Hour)

Topic: Pulmonary Neoplasms

Learning Objectives

Students should be able to:

- Classify lung tumors.
- Explain molecular pathogenesis.
- Describe clinicopathological features of major lung cancers.
- Identify prognostic factors.

Lecture Outline

Time	Content
10 min	Classification of lung tumors
20 min	Adenocarcinoma, Squamous cell carcinoma, Small cell carcinoma, Large cell carcinoma
15 min	Molecular genetics, risk factors, paraneoplastic syndromes
10 min	Diagnosis, staging, prognosis
5 min	Summary and discussion

Teaching Methods

- PowerPoint lecture
- Histopathology image interpretation
- Case discussion

Teaching Aids

- Robbins textbook
- Digital pathology slides
- Whiteboard

Assessment

- MCQs
- Short-answer questions
- Viva voce

Lesson Plan: GI Pathology: Lecture 1

Topic: Esophageal Diseases

Duration: 1 Hour

Learning Objectives

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

- Describe congenital and acquired esophageal disorders.
- Explain the pathogenesis of GERD and Barrett esophagus.
- Discuss esophageal carcinoma.

Lecture Outline

Time	Content
10 min	Normal anatomy and histology of esophagus
15 min	Congenital anomalies, diverticula, achalasia
15 min	GERD and Barrett esophagus
15 min	Esophageal carcinoma (SCC & adenocarcinoma)
5 min	Summary and questions

Teaching Methods

- PowerPoint presentation
- Histopathology images (Robbins)
- Case discussion

Learning Resources

- Robbins & Cotran Pathologic Basis of Disease
- Histology slides

Assessment

- MCQs
 - Oral questions
-

Lesson Plan: GI Pathology: Lecture 2

Topic: Gastritis and Peptic Ulcer Disease

Duration: 1 Hour

Learning Objectives

Students will be able to:

- Classify gastritis.
- Explain *Helicobacter pylori* infection.
- Describe peptic ulcer disease and complications.

Lecture Outline

Time	Content
10 min	Gastric anatomy and defense mechanisms
15 min	Acute gastritis
15 min	Chronic gastritis (<i>H. pylori</i> , autoimmune)
15 min	Peptic ulcer disease
5 min	Summary

Teaching Methods

- Interactive lecture
- Histopathology slides
- Clinical correlation

Resources

- Robbins Pathology
- Endoscopic images

Assessment

- MCQs
 - Short discussion
-

Lesson Plan: GI Pathology: Lecture 3

Topic: Gastric Neoplasms

Duration: 1 Hour

Learning Objectives

Students should be able to:

- Classify gastric polyps.
- Explain gastric adenocarcinoma.
- Describe gastric lymphoma and GIST.

Lecture Outline

Time	Content
10 min	Gastric polyps
15 min	Gastric adenocarcinoma
15 min	Risk factors and pathology
15 min	Gastric lymphoma & GIST
5 min	Review

Teaching Methods

- Lecture
- Microscopic image interpretation
- Case-based learning

Resources

- Robbins
- WHO classification

Assessment

- Viva
 - MCQs
-

Lesson Plan: GI Pathology: Lecture 4

Topic: Diseases of the Small Intestine

Duration: 1 Hour

Learning Objectives

Students should be able to:

- Describe malabsorption syndromes.
- Explain celiac disease.
- Discuss infectious enteritis.

Lecture Outline

Time	Content
10 min	Small intestinal structure and function
15 min	Malabsorption syndromes
15 min	Celiac disease
15 min	Infectious enteritis and ischemic bowel disease
5 min	Summary

Teaching Methods

- Interactive lecture
- Histology review

Resources

- Robbins
- Clinical photographs

Assessment

- MCQs
 - Short-answer questions
-

Lesson Plan: GI Pathology: Lecture 5

Topic: Inflammatory Bowel Disease (IBD)

Duration: 1 Hour

Learning Objectives

Students should be able to:

- Differentiate Crohn disease and ulcerative colitis.
- Explain pathogenesis and morphology.
- Recognize complications.

Lecture Outline

Time	Content
10 min	Introduction to IBD
20 min	Crohn disease
20 min	Ulcerative colitis
5 min	Comparison table
5 min	Questions

Teaching Methods

- PowerPoint lecture
- Histopathology discussion
- Case scenarios

Resources

- Robbins Pathology

Assessment

- MCQs
 - Viva
-

Lesson Plan: GI Pathology: Lecture 6

Topic: Diseases of the Colon and Appendix

Duration: 1 Hour

Learning Objectives

Students should be able to:

- Describe appendicitis.
- Explain diverticular disease.
- Classify colonic polyps.

Lecture Outline

Time	Content
10 min	Anatomy and pathology overview
15 min	Acute appendicitis
15 min	Diverticular disease
15 min	Hyperplastic, inflammatory, and adenomatous polyps
5 min	Summary

Teaching Methods

- Lecture
- Histopathology images
- Clinical discussion

Resources

- Robbins
- Gross pathology images

Assessment

- MCQs
 - Oral questions
-

Lesson Plan: GI Pathology: Lecture 7

Topic: Colorectal Carcinoma

Duration: 1 Hour

Learning Objectives

Students should be able to:

- Explain molecular pathways of colorectal carcinoma.
- Describe morphology and staging.
- Discuss screening methods and prognosis.

Lecture Outline

Time	Content
10 min	Epidemiology and risk factors
20 min	APC, MSI, and serrated pathways
15 min	Morphology, TNM staging, and spread
10 min	Clinical features, screening, and prognosis
5 min	Summary and Q&A

Teaching Methods

- PowerPoint presentation
- Histopathology and gross specimen images
- Case-based discussion

Learning Resources

- **Robbins & Cotran Pathologic Basis of Disease (latest edition)**
- WHO Classification of Digestive System Tumours
- AJCC TNM Staging Manual

Assessment

- 5–10 MCQs
- Short-answer questions
- Viva based on histopathology images

Lesson Plan: Hepatobiliary System: Lecture 1

Topic: Jaundice and Cholestasis

Duration: 1 Hour

Learning Objectives

By the end of the session, students should be able to:

- Define jaundice and cholestasis.
- Explain bilirubin metabolism.
- Classify jaundice.
- Describe pathological causes and clinical features.

Content Outline

Time	Activity
10 min	Introduction and bilirubin metabolism
15 min	Types of jaundice (prehepatic, hepatic, posthepatic)
15 min	Cholestasis: causes and pathology
10 min	Clinical features and laboratory findings
10 min	Case discussion and summary

Teaching Methods

- Interactive lecture
- Flowcharts
- Clinical case discussion

Teaching Aids

- PowerPoint
- Liver pathology diagrams
- Whiteboard

Assessment

- Short-answer questions
- MCQs
- Case-based discussion

Lesson Plan: Hepatobiliary System: Lecture 2

Topic: Viral Hepatitis

Duration: 1 Hour

Learning Objectives

Students will be able to:

- Classify hepatitis viruses.
- Describe pathogenesis of viral hepatitis.
- Explain morphological changes.
- Differentiate acute and chronic hepatitis.

Content Outline

Time	Activity
10 min	Introduction and classification
15 min	Pathogenesis of viral hepatitis
15 min	Morphology of acute and chronic hepatitis
10 min	Clinical features and complications
10 min	Summary and questions

Teaching Methods

- Lecture
- Histopathology image discussion
- Question-answer session

Teaching Aids

- Robbins histology images
- PowerPoint
- Whiteboard

Assessment

- MCQs
- Viva questions
- Slide identification

Lesson Plan: Hepatobiliary System: Lecture 3

Topic: Alcoholic Liver Disease and Non-Alcoholic Fatty Liver Disease (NAFLD)

Duration: 1 Hour

Learning Objectives

Students should be able to:

- Describe fatty liver disease.
- Explain alcoholic liver disease.
- Discuss pathogenesis and morphology.
- Identify complications.

Content Outline

Time	Activity
10 min	Introduction to fatty liver disease
15 min	Alcoholic liver disease
15 min	NAFLD and NASH
10 min	Cirrhosis and complications
10 min	Clinical correlation and summary

Teaching Methods

- Interactive lecture
- Clinical scenario discussion

Teaching Aids

- Histology slides
- PowerPoint
- Whiteboard

Assessment

- MCQs
 - Short notes
 - Oral questions
-

Lesson Plan: Hepatobiliary System: Lecture 4

Topic: Cirrhosis and Portal Hypertension

Duration: 1 Hour

Learning Objectives

Students will be able to:

- Define cirrhosis.
- Explain causes and pathogenesis.
- Describe morphology.
- Discuss portal hypertension and complications.

Content Outline

Time	Activity
10 min	Definition and etiology
15 min	Pathogenesis of cirrhosis
15 min	Morphological changes
10 min	Portal hypertension and complications
10 min	Case discussion and recap

Teaching Methods

- Lecture
- Clinical case discussion
- Diagram-based teaching

Teaching Aids

- PowerPoint
- Histology images
- Whiteboard

Assessment

- MCQs
 - SAQs
 - Viva
-

Lesson Plan: Hepatobiliary System: Lecture 5

Topic: Hepatic Tumors

Duration: 1 Hour

Learning Objectives

Students should be able to:

- Classify benign and malignant liver tumors.
- Describe hepatocellular carcinoma.
- Explain risk factors and pathogenesis.
- Discuss morphology and prognosis.

Content Outline

Time	Activity
10 min	Classification of liver tumors
15 min	Hepatocellular carcinoma
10 min	Cholangiocarcinoma
15 min	Morphology, diagnosis, and prognosis
10 min	Summary and discussion

Teaching Methods

- Lecture
- Histopathology review
- Clinical case discussion

Teaching Aids

- PowerPoint
- Histology slides
- Whiteboard

Assessment

- MCQs
- Oral questioning
- Case-based discussion

Lesson Plan: Hepatobiliary System: Lecture 6

Topic: Diseases of the Gallbladder and Biliary Tract

Duration: 1 Hour

Learning Objectives

Students will be able to:

- Describe cholelithiasis.
- Explain acute and chronic cholecystitis.
- Discuss gallbladder carcinoma.
- Understand biliary obstruction.

Content Outline

Time	Activity
10 min	Anatomy review and introduction
15 min	Cholelithiasis
15 min	Cholecystitis (acute and chronic)
10 min	Gallbladder carcinoma and biliary obstruction
10 min	Summary and case discussion

Teaching Methods

- Interactive lecture
- Case-based learning
- Image discussion

Teaching Aids

- PowerPoint
- Gross pathology and histology images
- Whiteboard

Assessment

- MCQs
- Short-answer questions
- Viva voce

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Endocrine (Lecture-3)

Learning objective: (10 mins)

Students will be able to-

- Define diabetes mellitus and classify its major types.
- Describe the etiopathogenesis of Type 1 and Type 2 diabetes mellitus.
- Explain the morphological changes in diabetes mellitus.
- Discuss the acute and chronic complications of diabetes mellitus.
- Correlate laboratory investigations with the diagnosis and monitoring of diabetes mellitus.

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal structure and function of the pancreas.
- Physiology of insulin and glucose metabolism.
- Regulation of blood glucose homeostasis.

List of content: Mentioned in curriculum

- **Definition and classification of diabetes mellitus**
- **Type 1 diabetes mellitus**
- **Type 2 diabetes mellitus**
- **Pathogenesis**
- **Morphology**
- **Acute complications**
- **Chronic complications**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Endocrine (Lecture-4)

Learning objective: (10 mins)

Students will be able to-

- Describe the principles and methods of blood glucose estimation.
- Explain the indications, procedure and interpretation of the Glucose Tolerance Test (GTT).
- Differentiate normal glucose tolerance, impaired glucose tolerance and diabetes mellitus based on GTT results.
- Discuss the clinical applications and limitations of blood glucose estimation and GTT.
- Correlate laboratory findings with the diagnosis of disorders of carbohydrate metabolism.

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Carbohydrate metabolism.
- Physiology of insulin and glucagon.
- Regulation of blood glucose homeostasis.

List of content: Mentioned in curriculum

- **Blood glucose estimation**
- **Blood glucose tests**
- **Oral Glucose Tolerance Test (OGTT)**
- **Interpretation of OGTT**
- **Clinical applications and limitations**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

Lesson Plan: Renal Pathology: Lecture 1

Topic: Glomerular Diseases

Duration: 1 hour

Learning Objectives

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

- Classify glomerular diseases.
- Explain nephritic and nephrotic syndromes.
- Describe the pathology of common glomerular diseases.
- Correlate pathological changes with clinical manifestations.

Teaching Outline

Time	Topic
10 min	Normal glomerular structure and classification of glomerular diseases
15 min	Nephritic syndrome (Post-streptococcal GN, RPGN, IgA nephropathy)
15 min	Nephrotic syndrome (Minimal change disease, FSGS, Membranous nephropathy)
10 min	Chronic glomerulonephritis and clinicopathological correlation
10 min	Summary, MCQs, discussion

Teaching Methods

- PowerPoint presentation
- Histopathology images
- Clinical case discussion

Teaching Aids

- Robbins Pathologic Basis of Disease
- Microscope images
- Whiteboard

Assessment

- MCQs
- Oral questioning
- Case-based discussion

Lesson Plan: Renal Pathology: Lecture 2

Topic: Tubulointerstitial Diseases and Vascular Diseases of the Kidney

Duration: 1 hour

Learning Objectives

Students will be able to:

- Describe acute tubular injury.
- Explain tubulointerstitial nephritis.
- Discuss pyelonephritis.
- Describe vascular diseases affecting kidneys.

Teaching Outline

Time	Topic
10 min	Introduction to tubulointerstitial diseases
20 min	Acute tubular injury, drug-induced nephritis, pyelonephritis
15 min	Renal vascular diseases (Benign nephrosclerosis, malignant hypertension, thrombotic microangiopathy)
5 min	Morphology and clinical significance
10 min	Summary and MCQs

Teaching Methods

- Interactive lecture
- Histology slides
- Clinical scenarios

Teaching Aids

- Robbins textbook
- PowerPoint
- Whiteboard

Lesson Plan: Renal Pathology: Lecture 3

Topic: Renal Function Tests

Duration: 1 hour

Learning Objectives

Students should be able to:

- Explain normal renal physiology related to renal function tests.
- Interpret renal function tests.
- Correlate laboratory findings with renal diseases.

Teaching Outline

Time	Topic
10 min	Overview of kidney functions
15 min	Serum creatinine, blood urea nitrogen (BUN), eGFR
15 min	Creatinine clearance, urine analysis, proteinuria, albuminuria
10 min	Biomarkers of renal injury and electrolyte abnormalities
10 min	Clinical interpretation with case discussion

Teaching Methods

- Lecture
- Laboratory report interpretation
- Case-based learning

Teaching Aids

- Robbins
- Sample laboratory reports
- PowerPoint

Assessment

- Interpretation of laboratory reports
 - MCQs
-

Lesson Plan: Renal Pathology: Lecture 4

Topic: Acute Kidney Injury (AKI) and Chronic Kidney Disease (CKD)

Duration: 1 hour

Learning Objectives

Students will be able to:

- Define AKI and CKD.
- Explain causes and pathogenesis.
- Describe pathological features.
- Discuss complications.

Teaching Outline

Time	Topic
10 min	Definition and classification
20 min	Acute kidney injury—causes, pathology, clinical features
20 min	Chronic kidney disease—pathogenesis, morphology, complications
10 min	Summary and case discussion

Teaching Methods

- Lecture
- Flow charts
- Clinical case discussion

Teaching Aids

- Robbins textbook
- PowerPoint
- Whiteboard

Assessment

- MCQs
- Oral questions
- Clinical case analysis

Lesson Plan: Renal Pathology: Lecture 5

Topic: Tumours of the Kidney

Duration: 1 hour

Learning Objectives

Students should be able to:

- Classify renal tumours.
- Describe pathology of benign and malignant renal tumours.
- Explain molecular pathogenesis of renal cell carcinoma.
- Discuss clinicopathological features and prognosis.

Teaching Outline

Time	Topic
10 min	Classification of renal tumours
20 min	Renal cell carcinoma (clear cell, papillary, chromophobe)
10 min	Wilms tumour
10 min	Benign tumours (renal papillary adenoma, oncocytoma, angiomyolipoma)
10 min	Gross pathology, histology, prognosis, summary and MCQs

Teaching Methods

- Interactive lecture
- Gross specimen photographs
- Histopathology slides

Teaching Aids

- Robbins Pathologic Basis of Disease
- PowerPoint
- Whiteboard
- **Assessment**
 - MCQs
 - Image-based questions
 - Viva discussion

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Male genital system (Lecture-1)

Learning objective: (10 mins)

Students will be able to-

- Describe the normal anatomy and histology of the male genital system.
- Classify diseases of the male genital system.
- Describe the etiopathogenesis and morphology of benign prostatic hyperplasia (BPH).
- Discuss the etiopathogenesis, morphology and clinical features of carcinoma of the prostate

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding the anatomy, histology and physiological functions of the male genital organs with emphasis on the prostate and testes.

List of content: Mentioned in curriculum

- Overview of the male genital system
- Benign prostatic hyperplasia (BPH): definition, etiology, pathogenesis, morphology and complications
- Prostatic carcinoma: risk factors, pathogenesis, morphology, grading, spread and clinical features

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Male genital system (Lecture-2)

Learning objective: (10 mins)

Students will be able to-

- Classify testicular germ cell and non-germ cell tumors.
- Describe the etiopathogenesis, morphology and clinical features of seminoma.
- Differentiate seminoma from non-seminomatous germ cell tumors.
- Describe the pathology of carcinoma of the penis.
- Discuss the risk factors, morphology and clinical significance of testicular torsion and cryptorchidism

Prerequisite learning: (5 mins)

- Normal anatomy and histology of the testes and penis.
- Classification of male genital system diseases.
- Concepts learned in Lecture 1 (BPH and carcinoma of the prostate).

List of content: Mentioned in curriculum

- Cryptorchidism
- Testicular torsion
- Testicular tumors
- Clinical features and tumor markers (AFP, β -hCG, LDH)
- Carcinoma of the penis

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Male genital system (Lecture-3)

Learning objective: (10 mins)

Students will be able to-

- Classify inflammatory diseases of the testes and epididymis.
- Describe the etiopathogenesis, morphology and complications of epididymitis and orchitis.
- Explain the causes and pathological changes of granulomatous orchitis and tuberculous epididymo-orchitis.
- Describe the indications, procedure and interpretation of semen analysis.
- Correlate abnormal semen parameters with male infertility

Prerequisite learning: (5 mins)

- Normal anatomy and histology of the testes, epididymis and vas deferens.
- Physiology of spermatogenesis.
- Basic composition and function of semen

List of content: Mentioned in curriculum

A. Inflammatory Diseases of the Testes

- Epididymitis
- Orchitis

B. Semen Analysis

- Indications
- Specimen collection and handling
- Normal semen parameters (WHO)
- Common abnormalities
- Clinical interpretation in male infertility

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Female genital system (Lecture-1)

Learning objective: (10 mins)

Students will be able to-

- Describe the epidemiology and risk factors of cervical cancer.
- Explain the etiopathogenesis of cervical cancer with emphasis on HPV infection.
- Classify cervical intraepithelial neoplasia (CIN) and invasive cervical carcinoma.
- Describe the morphology, clinical features and spread of cervical cancer.
- Discuss the screening, diagnosis and prevention of cervical cancer.

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the cervix.
- Transformation zone of the cervix.
- Human papillomavirus (HPV) infection and its transmission

List of content: Mentioned in curriculum

- **Introduction**
- **Etiology and Risk Factors**
- **Pathogenesis**
- **Precancerous Lesions**
- **Invasive Cervical Carcinoma**
- **Clinical Features**
- **Diagnosis**
- **Spread and Complications**
- **Prevention**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Female genital system (Lecture-2)

Learning objective: (10 mins)

Students will be able to-

- Classify benign and malignant tumors of the uterus.
- Describe the etiopathogenesis, morphology and clinical features of uterine leiomyoma and leiomyosarcoma.
- Explain the pathogenesis, morphology and clinical significance of endometriosis.
- Describe the etiopathogenesis, classification and morphology of endometrial hyperplasia.
- Correlate endometrial hyperplasia with the risk of endometrial carcinoma

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the uterus.
- Structure and function of the endometrium and myometrium.
- Normal menstrual cycle and hormonal regulation

List of content: Mentioned in curriculum

A. Tumors of the Uterus

- **Benign Tumor(Leiomyoma (Fibroid))**
- **Malignant Tumors(Endometrial carcinoma (brief overview))**

B. Endometriosis

- **Definition**
- **Sites of occurrence**
- **Etiopathogenesis**
- **Morphology**
- **Clinical features**
- **Complications**

C. Endometrial Hyperplasia

- **Definition**
- **Etiology**
- **Classification**
- **Morphology**
- **Clinical features**
- **Risk of progression to endometrial carcinoma**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Female genital system (Lecture-3)

Learning objective: (10 mins)

Students will be able to-

- Classify ovarian tumors according to their cell of origin.
- Describe the etiopathogenesis, morphology and clinical features of common epithelial ovarian tumors.
- Discuss the pathology of germ cell and sex cord-stromal tumors of the ovary.
- Correlate ovarian tumor markers with different ovarian neoplasms.
- Explain the spread, complications and prognosis of ovarian malignancies

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the ovary.
- Ovarian follicular development.
- Hormonal functions of the ovary.

List of content: Mentioned in curriculum

- **Introduction**
- **Classification of ovarian tumors**
- **Morphology**
- **Clinical features and tumor markers**
- **Hormonal manifestations**
- **Metastatic Tumors**
- **Clinical applications**
- **Spread and Complications**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Female genital system (Lecture-4)

Learning objective: (10 mins)

Students will be able to-

- Define gestational trophoblastic disease (GTD) and classify its major types.
- Differentiate complete and partial hydatidiform mole based on etiology, morphology and clinical features.
- Describe the etiopathogenesis, morphology and clinical features of choriocarcinoma.
- Explain the principle, interpretation and clinical applications of pregnancy tests.
- Correlate serum β -hCG levels with gestational trophoblastic diseases and patient follow-up

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal fertilization and implantation.
- Structure and function of chorionic villi and trophoblast.
- Human chorionic gonadotropin (β -hCG) physiology

List of content: Mentioned in curriculum

- **Gestational Trophoblastic Disease (GTD)**
- **Hydatidiform Mole**
- **Choriocarcinoma**
- **Pregnancy Test**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Breast (Lecture-1)

Learning objective: (10 mins)

Students will be able to-

- Classify inflammatory diseases of the breast.
- Describe the etiopathogenesis, morphology and clinical features of acute mastitis, breast abscess and fat necrosis.
- Explain the pathogenesis, morphology and clinical significance of mammary duct ectasia.
- Describe the etiopathogenesis, classification and morphology of fibrocystic disease of the breast.
- Correlate fibrocystic changes with the risk of breast carcinoma.

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the breast.
- Hormonal regulation of breast development.
- Basic physiology of lactation

List of content: Mentioned in curriculum

A. Inflammatory Diseases of the Breast

Acute Mastitis

Breast Abscess

Mammary Duct Ectasia (Periductal Mastitis)

Fat Necrosis

B. Fibrocystic Disease (Fibrocystic Changes)

Definition

Non-proliferative Changes

Proliferative Disease Without Atypia

Proliferative Disease With Atypia

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Breast (Lecture-2)

Learning objective: (10 mins)

Students will be able to-

- Describe the epidemiology and risk factors of breast carcinoma.
- Explain the molecular pathogenesis and classification of breast carcinoma.
- Describe the morphology and clinicopathological features of common types of breast carcinoma.
- Discuss the methods of diagnosis, prognostic and predictive factors of breast carcinoma.
- Correlate molecular subtypes with targeted therapy and prognosis

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the breast.
- Hormonal regulation of breast tissue.
- Benign breast diseases (fibrocystic changes and fibroadenoma)

List of content: Mentioned in curriculum

- **Epidemiology and risk factors**
- **Molecular pathogenesis (BRCA1, BRCA2, HER2, TP53)**
- **Classification**
- **Morphology**
- **Clinical features**
- **Diagnosis**
- **Prognostic and predictive factors**
- **Patterns of spread**
- **Principles of management**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Bone & Soft tissue

Learning objective: (10 mins)

Students will be able to-

- Classify common diseases of bone and soft tissue.
- Describe the etiopathogenesis, morphology and clinical features of common bone tumors.
- Explain the pathology of common soft tissue tumors.
- Differentiate benign and malignant bone and soft tissue tumors.
- Correlate clinicopathological features of bone and soft tissue neoplasms

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of bone.
- Bone remodeling and repair.
- Structure and functions of skeletal muscle, adipose tissue and fibrous connective tissue

List of content: Mentioned in curriculum

- **Classification of bone tumors**
- **Benign bone tumors**
- **Malignant bone tumors**
- **Classification of soft tissue tumors**
- **Benign soft tissue tumors**
- **Malignant soft tissue tumors**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Skin

Learning objective: (10 mins)

Students will be able to-

- Describe the structure and functions of the skin.
- Classify inflammatory and neoplastic disorders of the skin.
- Explain the etiopathogenesis and morphology of common inflammatory skin diseases.
- Describe the pathology of benign and malignant skin tumors.
- Correlate clinicopathological features of common skin diseases.

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the skin.
- Structure and function of the epidermis and dermis.
- Skin appendages.

List of content: Mentioned in curriculum

- **Structure and function of the skin**
- **Classification of skin diseases**
- **Inflammatory skin diseases (**
- **Vesiculobullous disorders**
- **Pigmented skin lesions**
- **Non-melanocytic skin tumors**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: CNS

Learning objective: (10 mins)

Students will be able to-

- Classify common diseases of the central nervous system.
- Describe the etiopathogenesis, morphology and clinical features of CNS infections.
- Explain the pathology of cerebrovascular diseases.
- Describe the pathology of common CNS tumors.
- Correlate clinicopathological features of common CNS disorders

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the brain and spinal cord.
- Blood–brain barrier.
- Meninges and cerebrospinal fluid (CSF)

List of content: Mentioned in curriculum

- **Classification of CNS diseases**
- **CNS infections**
- **Cerebrovascular diseases**
- **CNS tumors**
- **Raised intracranial pressure and brain herniation (brief)**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

Department of Pathology

Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Peripheral Nervous System (Tutorial 1)

Learning objective: (10 mins)

Students will be able to-

- Define and describe the components and organization of the peripheral nervous system.
- Describe the structure and functions of cranial nerves, spinal nerves and peripheral nerves.
- Describe the histological structure of peripheral nerves and supporting cells.
- Explain the formation and functions of nerve plexuses.
- Identify common clinical disorders affecting the peripheral nervous system.

List of content: Mentioned in curriculum

- Components and organization of the peripheral nervous system
- Cranial nerves
- Spinal nerves and nerve roots
- Peripheral nerves and their branches
- Sensory and motor nerve fibers
- Structure and histology of peripheral nerves
- Schwann cells and myelination
- Ganglia: sensory and autonomic
- Nerve plexuses
- Autonomic nervous system
- Common peripheral nerve injuries and neuropathies
- Clinical examination of the peripheral nervous system

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for large group teaching (lecture) of Com-32

Date & time:

Venue: Lecture gallery

Duration: 1 hour

Topic: Eye & ENT

Learning objective: (10 mins)

Students will be able to-

- Classify common diseases of the eye and ENT.
- Describe the etiopathogenesis, morphology and clinical features of common inflammatory diseases of the eye and ENT.
- Explain the pathology of common benign and malignant tumors of the eye and ENT.
- Correlate clinicopathological features of common eye and ENT disorders.
- Discuss the importance of histopathological examination in the diagnosis of eye and ENT lesions.

Prerequisite learning: (5 mins)

Discuss the students' pre-existing knowledge regarding:

- Normal anatomy and histology of the eye.
- Normal anatomy and histology of the ear, nose and throat.
- Functions of the upper respiratory tract and eye.

List of content: Mentioned in curriculum

- **Classification of eye and ENT diseases**
- **Eye(Conjunctivitis, Retinoblastoma, Malignant melanoma)**
- **Ear (Chronic suppurative otitis media, Cholesteatoma)**
- **Nose and paranasal sinuses (Nasal polyp, Sinonasal papilloma, Nasopharyngeal carcinoma)**
- **Larynx (Vocal cord nodule, Squamous cell carcinoma)**

Method of instruction: Lecture (20 mins)

Lecture method: Text book, powerpoint presentation, white board – marker

Summary: 5 mins

Feedbacks: 10 mins (ask the students, quiz, MCQ, assignment)

References: 3 mins (Robbins and Cotran pathologic basis of disease)

Conclusion: 7 mins (Take home message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Introduction of pathology, Histo-cytopathological sample collection, preservation, transport and processing of pathological samples

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to:

1. Define pathology and its branches
2. Describe principles of histopathological and cytopathological sample collection
3. Explain methods of preservation, transport and processing of samples
4. Identify common errors and precautions in sample handling

List of content: Mentioned in curriculum

Definition of pathology

Branches (General and Systemic pathology)

Sample collection:

Biopsy

Cytology (FNAC, exfoliative)

Preservation:

Fixatives

Transport of samples

Processing:

Tissue processing steps

Staining

Common errors and precautions

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Cellular adaptations, intracellular accumulation, calcification, cellular aging (tutorial 2)

Learning objective: (10 mins)

Students will be able to:

Define cellular adaptation and its types

Describe features and examples of cellular adaptations

Explain intracellular accumulations and pathological calcification

Discuss the concept of cellular aging

List of content: Mentioned in curriculum

Cellular adaptation:

Hypertrophy

Hyperplasia

Atrophy

Metaplasia

Intracellular accumulation: Lipid, protein, glycogen, pigments

Calcification: Dystrophic, Metastatic

Cellular aging: Causes, Morphological changes

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Cell injury (tutorial 3)

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

- Define reversible and irreversible injury
- Identify the causes of cell injury
- Describe the mechanisms of reversible and irreversible injury

List of content: Mentioned in curriculum

- Cause of cell injury
- Reversible and irreversible injury: mechanism
- Mechanism of hypoxic injury
- Name of free radical, target of free radical and scavenging system (name of the anti-oxidant), definition of reperfusion injury

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Irreversible cell injury—Necrosis & Apoptosis

Learning objective: (10 mins)

Students will be able to:

Define irreversible cell injury

Differentiate necrosis and apoptosis

Describe types and morphology of necrosis

Explain mechanism and examples of apoptosis

List of content: Mentioned in curriculum

Irreversible cell injury

Necrosis: Types (coagulative, liquefactive, caseous, fat, fibrinoid)

Morphology

Apoptosis:

Mechanism

Examples

Differences between necrosis and apoptosis

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

**Department of Pathology
Comilla Medical College**

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Acute inflammation

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to:

Define inflammation and list its causes
Describe cardinal signs and types of inflammation
Explain vascular and cellular events of acute inflammation
Discuss chemical mediators and outcomes

List of content: Mentioned in curriculum

Definition and causes
Cardinal signs
Types of inflammation
Acute inflammation:
Vascular events
Cellular events
Chemotaxis
Phagocytosis
Chemical mediators
Morphological patterns
Outcome
Systemic effects of acute inflammation

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Chronic inflammation

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to:

Define chronic inflammation

Identify cells involved in chronic inflammation

Explain granulomatous inflammation and its causes

List of content: Mentioned in curriculum

Definition

Cells (macrophages, lymphocytes, plasma cells)

Granulomatous inflammation:

Causes (TB, leprosy, foreign body)

Mechanism

Examples

Mediators of chronic inflammation

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Healing and repair

Learning objective: (10 mins)

Students will be able to:

Define healing and repair

Describe types and mechanisms of wound healing

Identify factors affecting healing and complications

List of content: Mentioned in curriculum

Definitions

Types (primary, secondary intention)

Mechanism:

Inflammation

Proliferation

Remodeling

Factors affecting healing

Complications (keloid, contracture)

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Haemodynamic disorders 01: (oedema, effusions, electrolyte disorders)

Learning objective: (10 mins)

Students will be able to-

Define oedema and effusion

Explain causes and mechanisms

Describe basic electrolyte imbalance disorders

List of content: Mentioned in curriculum

Oedema:

Causes

Mechanism

Effusions:

Types (transudate, exudate)

Electrolyte disorders:

Sodium imbalance

Potassium imbalance

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Hemodynamic disorders 02: Hyperemia, congestion, haemorrhage, shock

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Learning objective: (10 mins)

Students will be able to:

Differentiate hyperemia and congestion

Describe causes and effects of haemorrhage

Explain types and stages of shock

List of content: Mentioned in curriculum

Hyperemia vs congestion

Haemorrhage:

Types

Consequences

Shock:

Types (hypovolemic, septic, cardiogenic, others)

Stages

Pathogenesis

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Haemodynamic disorders 03: (Haemostasis, thrombosis, embolism, infarction)

Learning objective: (10 mins)

Students will be able to:
Describe normal haemostasis
Explain pathogenesis of thrombosis
Define embolism and infarction

List of content: Mentioned in curriculum

Haemostasis
Thrombosis:
Virchow's triad
Fate of thrombus
Embolism:
Types
Infarction:
Types (red, white)

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

**Department of Pathology
Comilla Medical College**

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Neoplasia 01: (definition, nomenclature, nature of tumors, incidence & predisposition, Features of malignancy & molecular basis)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Learning objective: (10 mins)

Students will be able to:

Define neoplasia

Classify tumors based on behavior and origin

Describe epidemiology and risk factors

Describe morphological features of malignancy

Explain invasion and metastasis

Discuss molecular basis of cancer

List of content: Mentioned in curriculum

Definition

Nomenclature, Tumor types, Benign, Malignant, Borderline

Risk factors: Genetic and Environmental

Anaplasia

Invasion

Metastasis

Oncogene, Tumor suppressor gene, Oncoprotein

Hallmarks of cancer

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Neoplasia 02 (Carcinogens, clinical aspects of tumour, lab diagnosis, tumour immunity, grading and staging of cancer)

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to:

Explain mechanisms of carcinogenesis

Identify clinical features of cancer

Describe grading and staging

Explain immune response to tumors

Describe laboratory diagnosis of cancer

List of content: Mentioned in curriculum

Carcinogens:, Direct, Indirect

Cancer cachexia

Paraneoplastic syndrome

Grading

Staging

Tumor immunity, Immune surveillance, Antitumor mechanisms

Laboratory diagnosis, Biopsy, Cytology

Tumor markers

Immunohistochemistry

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Genetics, Cytogenetic disorders

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

Define gene mutation and genetic disorders

Classify genetic disorders into single gene, chromosomal and multifactorial types

Describe the basic features and examples of each type of genetic disorder

Explain the pattern of inheritance of single gene disorders

Define mutation and classify its types, Describe causes of genetic mutation

Explain the cytogenetic basis of Down's and Turner's syndrome

Identify clinical features and laboratory diagnosis of common chromosomal disorders

List of content: Mentioned in curriculum

Definition of genetic disorder, Types, Single gene disorders (Autosomal dominant, Autosomal recessive, X-linked), Chromosomal disorders (Numerical and structural), Multifactorial/complex disorders, Examples of each type

Basic concepts of inheritance pattern

Mutation: (Definition, Causes (physical, chemical, biological), Types (point mutation, deletion, insertion, frameshift)

Cytogenetic disorders: Down syndrome (Trisomy 21), Turner syndrome (45,XO), Clinical features, Laboratory diagnosis:

Karyotyping

Prenatal diagnosis (amniocentesis, CVS)

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Immunopathology

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

Define immunity and classify its types

Describe mechanisms of hypersensitivity reactions

Classify autoimmune and immunodeficiency disorders

Explain the basis of transplant rejection

List of content: Mentioned in curriculum

Immunity: Definition, Types (Innate, Adaptive)

Hypersensitivity (Type I–IV)

Autoimmune disorders (organ-specific, systemic)

Immunodeficiency: Primary and secondary

Transplant rejection:

Hyperacute, acute, chronic

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Nutritional disorders, Environmental & Infectious hazards

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

Classify nutritional disorders and describe PEM and obesity

Identify vitamin and mineral deficiency disorders

Explain health hazards of tobacco, alcohol and occupational exposure

Describe basic pathology of common infectious diseases

List of content: Mentioned in curriculum

Protein energy malnutrition (PEM)

Obesity

Vitamin deficiencies (A, D, C, B-complex)

Mineral deficiencies (iron, iodine)

Environmental hazards: Tobacco, alcohol

Occupational hazards: Arsenic, radiation

Infectious diseases: Tuberculosis, Leprosy, Syphilis

Childhood tumors (brief overview)

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Introduction & Terminology of Haematology

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

Describe proper methods of blood sample collection and processing

Identify components of blood and bone marrow

Explain haemopoiesis and RBC indices

Interpret basic haematological investigations

List of content: Mentioned in curriculum

Blood sample collection and anticoagulants

Preservation and processing

Constituents of blood and bone marrow

Haematopoiesis

Types of haemoglobin

RBC indices (MCV, MCH, MCHC)

Peripheral blood film (PBF)

Complete blood count (CBC)

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: RBC Disorders (Anaemia; IDA, Megaloblastic)

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

Define anaemia and classify it

Differentiate morphological and etiological classification

Explain pathogenesis of iron deficiency and megaloblastic anaemia

Interpret laboratory findings

List of content: Mentioned in curriculum

Definition of anaemia, Classification: Morphological, Etiological

Iron deficiency anaemia: Causes, Pathogenesis, Lab diagnosis

Megaloblastic anaemia: Causes, Pathogenesis, Lab diagnosis

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

**Department of Pathology
Comilla Medical College**

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Haemolytic Anaemia, Pancytopenia & Aplastic Anaemia

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

Classify haemolytic anaemia
Differentiate intracorpuscular and extracorpuscular causes
Describe pathogenesis of thalassemia and sickle cell anaemia
Identify laboratory features
Define pancytopenia and aplastic anaemia
Describe causes and pathogenesis
Identify laboratory diagnostic features

List of content: Mentioned in curriculum

Classification: Intracorpuscular, Extracorpuscular
Thalassemia: Pathogenesis, Lab diagnosis
Sickle cell anaemia: Pathogenesis, Lab diagnosis
Pancytopenia: causes
Aplastic anaemia:
Etiology
Pathogenesis
Bone marrow findings
Laboratory diagnosis

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: WBC Disorders

Learning objective: (10 mins)

Students will be able to-

Describe reactive WBC disorders

Differentiate leukocytosis and leukopenia

Identify features of leukemia and related conditions

List of content: Mentioned in curriculum

Reactive disorders: Neutrophilia, Eosinophilia, Lymphocytosis

Leukocytosis and leukopenia

Leukemia: Classification

Leukemoid reaction

Subleukemic leukemia

Myelodysplastic syndrome

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Lymphoproliferative Disorders, Myeloproliferative Disorders

Learning objective: (10 mins)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Students will be able to-

Classify lymphoid neoplasms

Describe morphology of Hodgkin and Non-Hodgkin lymphoma

Identify features of multiple myeloma

Classify myeloproliferative disorders

Describe pathogenesis and features of polycythemia and myelofibrosis

List of content: Mentioned in curriculum

Lymphadenitis

Lymphoma: Hodgkin lymphoma, Non-Hodgkin lymphoma

Morphology

Multiple myeloma

Polycythemia

Myelofibrosis

Basic pathogenesis

Laboratory findings

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Haemorrhagic Disorders

Learning objective: (10 mins)

Students will be able to-

Classify bleeding disorders

Explain pathogenesis of ITP, haemophilia and DIC

Interpret screening tests

List of content: Mentioned in curriculum

Classification of bleeding disorders

ITP

Haemophilia

DIC

Screening tests:

BT

CT

APTT

Tourniquet test

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (tutorial) of Com-32

Topic: Blood Grouping & Transfusion

Learning objective: (10 mins)

Students will be able to-

Describe types of blood groups

Identify different blood products

Explain transfusion reactions and hazards

List of content: Mentioned in curriculum

Blood grouping systems (ABO, Rh)

Blood products

Cross-matching

Screening tests

Hazards of blood transfusion

Introduction: 10 min

Session discussion: 40 min

Group discussion: 20 min

Interactive discussion: 10 min

Feedback: 15 min

Assessment: 10 min

Conclusion: 5 min (takehome message, evaluation by students)

Date & time:

Venue: Tutorial Class
Room

Duration: 2 hour

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (practical) of Com-32

Date & time:

Venue: Practical room

Duration: 1 hour

Topic: Practical (Acute appendicitis)

Introduction and attendance collection: 05 min

Learning objective: (05 mins)

Students will be able to-

- Morphological patterns of acute appendicitis.
- Outcome of acute appendicitis.
- Know about Congestion, suppuration, ulcer & oedema.

Checklist:

- Student properly placed the slide under microscope
- Student properly adjusted the slide under microscope
- Identified the structure properly under microscope with two identifying points
- Diagnosed correctly the supplied slide

Session discussion: 10 mins

Group discussion: 10 mins

Interactive discussion: 10 mins

Feedbacks: 05 mins

Assessment: 10 mins

Conclusion: 05 mins (Take home message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (practical) of Com-32

Date & time:

Venue: Practical room

Duration: 1 hour

Topic: Practical (Cervical polyp)

Introduction and attendance collection: 05 min

Learning objective: (05 mins)

Know about-

- Definition of polyp.
- Structure of polyp.

Checklist:

- Student properly placed the slide under microscope
- Student properly adjusted the slide under microscope
- Identified the structure properly under microscope with two identifying points
- Diagnosed correctly the supplied slide

Session discussion: 10 mins

Group discussion: 10 mins

Interactive discussion: 10 mins

Feedbacks: 05 mins

Assessment: 10 mins

Conclusion: 05 mins (Take home message, evaluation by students)

Department of Pathology

Comilla Medical College

Lesson plan for small group teaching (practical) of Com-32

Date & time:

Venue: Practical room

Duration: 1 hour

Topic: Practical (Chronic cholecystitis)

Introduction and attendance collection: 05 min

Learning objective: (05 mins)

Students will be able to-

Know about

- Chronic inflammation, chronic inflammatory cells.
- Fibrosis.

Checklist:

- Student properly placed the slide under microscope
- Student properly adjusted the slide under microscope
- Identified the structure properly under microscope with two identifying points
- Diagnosed correctly the supplied slide

Session discussion: 10 mins

Group discussion: 10 mins

Interactive discussion: 10 mins

Feedbacks: 05 mins

Assessment: 10 mins

Conclusion: 05 mins (Take home message, evaluation by students)

Department of Pathology

Comilla Medical College

Lesson plan for small group teaching (practical) of Com-32

Date & time:

Venue: Practical room

Duration: 1 hour

Topic: Practical (Leiomyoma)

Introduction and attendance collection: 05 min

Learning objective: (05 mins)

Know about-

- Benign tumor.
- Smooth muscle neoplasm.

Checklist:

- Student properly placed the slide under microscope
- Student properly adjusted the slide under microscope
- Identified the structure properly under microscope with two identifying points
- Diagnosed correctly the supplied slide

Session discussion: 10 mins

Group discussion: 10 mins

Interactive discussion: 10 mins

Feedbacks: 05 mins

Assessment: 10 mins

Conclusion: 05 mins (Take home message, evaluation by students)

Department of Pathology Comilla Medical College

Lesson plan for small group teaching (practical) of Com-32

Date & time:

Venue: Practical room

Duration: 1 hour

Topic: Practical (Nodular goitre)

Introduction and attendance collection: 05 min

Learning objective: (05 mins)

Know about-

- Hyperplasia.
- Hemorrhage.
- Calcification.

Checklist:

- Student properly placed the slide under microscope
- Student properly adjusted the slide under microscope
- Identified the structure properly under microscope with two identifying points
- Diagnosed correctly the supplied slide

Session discussion: 10 mins

Group discussion: 10 mins

Interactive discussion: 10 mins

Feedbacks: 05 mins

Assessment: 10 mins

Conclusion: 05 mins (Take home message, evaluation by students)

Department of Pathology

Comilla Medical College

Lesson plan for small group teaching (practical) of Com-32

Date & time:

Venue: Practical room

Duration: 1 hour

Topic: Practical (Nodular hyperplasia of prostate)

Introduction and attendance collection: 05 min

Learning objective: (05 mins)

Know about-

- Hyperplasia.
- Difference with prostate cancer.

Checklist:

- Student properly placed the slide under microscope
- Student properly adjusted the slide under microscope
- Identified the structure properly under microscope with two identifying points
- Diagnosed correctly the supplied slide

Session discussion: 10 mins

Group discussion: 10 mins

Interactive discussion: 10 mins

Feedbacks: 05 mins

Assessment: 10 mins

Conclusion: 05 mins (Take home message, evaluation by students)

Department of Pathology

Comilla Medical College

Lesson plan for small group teaching (practical) of Com-32

Date & time:

Venue: Practical room

Duration: 1 hour

Topic: Practical (Tubercular lymphadenitis)

Introduction and attendance collection: 05 min

Learning objective: (05 mins)

Students will be able to-

Know about

- Granuloma
- Caseous necrosis

Checklist:

- Student properly placed the slide under microscope
- Student properly adjusted the slide under microscope
- Identified the structure properly under microscope with two identifying points
- Diagnosed correctly the supplied slide

Session discussion: 10 mins

Group discussion: 10 mins

Interactive discussion: 10 mins

Feedbacks: 05 mins

Assessment: 10 mins

Conclusion: 05 mins (Take home message, evaluation by students)

