

Physiology Lecture Lesson Plans

Comprehensive Teaching Syllabus — Blood & Hematology Module

Lesson Plan 1: Blood (1)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	Plasma protein	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of blood
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Definition of blood
- Functions of blood.
- Plasma proteins with their functions & properties

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding blood	Open discussion
5-10	Introduction & review	Definition & functions of blood	PPT slide
10-20	Definition	Plasma protein with types	Discussion + PPT slide
20-30	Functions	Functions of plasma proteins	PPT slide Questioning
30-40	Properties	Properties of plasma proteins	PPT slides
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Total amount of plasma proteins _____
2. Albumin is separated by _____ salt

Assignment

- Write the functions of plasma proteins.
- How plasma proteins are separated?

Lesson Plan 2: RBC (2.1)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	RBC	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of RBC
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology & functions of RBC
- Erythropoiesis
- Hemoglobin
- Red cell indices
- Anaemia
- Polycythemia
- Jaundice

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding RBC	Open discussion
5-20	Introduction & review	Morphology of RBC	PPT slide
20-35	Definition	Functions of RBC	Discussion + PPT slide
35-50	Functions	Structure of RBC	PPT slide Questioning
50-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Sick cell is found in _____
2. Normal count of RBC in male is _____

Assignment

- Write the functions of RBC
- Write about the morphology of RBC.

Lesson Plan 3: RBC (2.2)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	RBC	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of RBC production
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology & functions of RBC
- Erythropoiesis
- Hemoglobin
- Red cell indices
- Anaemia
- Polycythemia
- Jaundice

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding RBC production	Open discussion
5-20	Introduction & review	Hemopoiesis	PPT slide
20-35	Definition	Erythropoiesis with steps	Discussion + PPT slide
35-50	Maturation	Maturation of RBC	PPT slide Questioning
50-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Hormone required for erythropoiesis is _____
2. Maturation factors for RBC are _____, _____ & _____

Assignment

- Write the steps of erythropoiesis.
- What are the difference between reticulocyte & mature RBC?

Lesson Plan 4: RBC (2.3)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	Hb, Red cell indices	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of RBC
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology & functions of RBC
- Erythropoiesis
- Hemoglobin
- Red cell indices
- Anaemia
- Polycythemia
- Jaundice

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding Red cell indices & Hb.	Open discussion
5-20	Introduction & review	Synthesis of Hb	PPT slide
20-35	Functions	Functions of Hb with pathies	Discussion + PPT slide
35-50	Definition	Red cell indices	PPT slide
50-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Normal value of MCV _____
2. MCH & MCHC is low in _____

Assignment

- Write the synthesis of Hb.
- Write about the red cell indices.

Lesson Plan 5: RBC (2.4)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	Anaemia	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of RBC
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology & functions of RBC
- Erythropoiesis
- Hemoglobin
- Red cell indices
- Anaemia
- Polycythemia
- Jaundice

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding anaemia	Open discussion
5-20	Definition	Definition of anaemia	PPT slide
20-35	Types	Classification of anaemia	Discussion + PPT slide
35-50	Correlation	Clinical correlation	PPT slide
50-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. In anaemia RBC is decreased both _____ & _____
2. MCH & MCHC is low in _____

Assignment

- Define anaemia
- Classify anaemia.

Lesson Plan 6: RBC (2.5)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	Anaemia	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of RBC
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology & functions of RBC
- Erythropoiesis
- Hemoglobin
- Red cell indices
- Anaemia
- Polycythemia
- Jaundice

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding anaemia	Open discussion
5-20	Definition	Definition of anaemia	PPT slide
20-35	Types	Classification of anaemia	Discussion + PPT slide
35-50	Correlation	Clinical correlation	PPT slide
50-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. In anaemia RBC is decreased both _____ & _____
2. MCH & MCHC is low in _____

Assignment

- Define anaemia
- Classify anaemia.

Lesson Plan 7: Blood (3)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	WBC	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of blood
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology of WBC
- Functions of WBC
- Properties of WBC

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding WBC	Open discussion
5-10	Introduction & review	Morphology of WBC	PPT slide
10-20	Development	Leukopoiesis	Discussion + PPT slide
20-30	Functions	Functions of WBC	PPT slide Questioning
30-40	Properties	Properties of WBC, leucocytosis & leucopenia	PPT slides
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Total count of WBC _____
2. Granular WBCs are _____, _____ & _____

Assignment

- Write the functions of WBC.
- How WBC causes phagocytosis?

Lesson Plan 8: Blood (4.1)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	Platelets	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of blood
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology of platelets
- Functions & development of platelets
- Hemostasis with events
- Coagulation mechanisms
- Anticoagulants with mode action
- Bleeding disorders

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding platelets	Open discussion
5-30	Introduction & review	Functions of platelets	PPT slide
30-45	Definition	Structures of platelets	Discussion + PPT slide
45-55	Functions	Development of platelet	PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Platelet count is _____
2. Granules present in platelet are _____

Assignment

- Write the functions of platelet.
- Write the thrombopoiesis mechanism.

Lesson Plan 9: Blood (4.2)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	Hemostasis	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of blood
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology of platelets
- Functions & development of platelets
- Hemostasis with events
- Coagulation mechanisms
- Anticoagulants with mode action
- Bleeding disorders

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding hemostasis	Open discussion
5-30	Introduction & review	Definition	PPT slide
30-45	Steps	Events	Discussion + PPT slide
45-55	Factors	Clotting factors required	PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Hemostasis is a _____ process
2. Hemostasis has _____ steps

Assignment

- Define hemostasis.
- Write the steps of hemostasis.

Lesson Plan 10: Blood (4.3)

Course:	Physiology	Year:	MBBS 1st year (Phase I)
Topic:	Coagulation	Duration:	60 minutes
Format:	Lecture class	Prerequisites:	Basic knowledge of blood
Venue:	Lecture Gallery 3	Teacher:	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

- Morphology of platelets
- Functions & development of platelets
- Hemostasis with events
- Coagulation mechanisms
- Anticoagulants with mode action
- Bleeding disorders

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding coagulation	Open discussion
5-30	Introduction & review	Definition & mechanism of coagulation	PPT slide
30-45	Definition	Definition & names of anticoagulants	Discussion + PPT slide
45-55	Step	Fibrinolysis	PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Coagulation has _____ processes
2. Anticoagulant used in blood bag is _____

Assignment

- Define coagulation with mechanisms
- What is anticoagulant?

DEPARTMENT OF PHYSIOLOGY

Cardiovascular System (CVS) Module — Compilation of Lesson Plans

Course: MBBS 1st Year (Phase I) | **Venue:** Lecture Gallery 3

Lesson Plan: CVS (1)

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Cardiac muscle properties, impulse generation & conduction
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of blood
Venue	Lecture Gallery 3
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Properties of cardiac muscle
2. Junctional tissues of heart
3. Impulse generation & conduction

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding Cardiac muscle properties, impulse generation & conduction	Open discussion
5-20	Introduction & review	Properties of cardiac muscle	PPT slide
20-35	Junctional tissues	Junctional tissues of heart	Discussion + PPT slide
35-55	Functions	Impulse generation & conduction	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. Power point slides with diagram
2. White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Name of the law for the ventricle is _____
2. Refractory period is of _____ types

Assignment

1. Write the properties of cardiac muscle.
2. How cardiac impulse generated & conducted?

Lesson Plan: CVS (2.1)

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Cardiac cycle
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of blood
Venue	Lecture Gallery 3
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Definition of cardiac cycle
2. Events of cardiac cycle
3. Volumes & pressure changes in cardiac cycle
4. Heart sounds
5. ECG
6. Heart block

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding Cardiac cycle	Open discussion
5-20	Definition	Definition & duration of cardiac cycle	PPT slide
20-40	Events	Events of cardiac cycle	Discussion + PPT slide
40-55	Changes	Volumes & pressure changes in cardiac cycle	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. Power point slides with diagram
2. White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Duration of cardiac cycle is _____
2. Events of cardiac cycle are of _____ types

Assignment

1. Draw & label cardiac cycle.
2. Briefly discuss volumes & pressure changes during cardiac cycle.

Lesson Plan: CVS (2.2)

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Heart sounds, ECG, Heart block
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of blood
Venue	Lecture Gallery 3
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Definition of cardiac cycle
2. Events of cardiac cycle
3. Volumes & pressure changes in cardiac cycle
4. Heart sounds
5. ECG
6. Heart block

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding Heart sounds, ECG, Heart block	Open discussion
5-25	Definition	Definition & waves of ECG	PPT slide
25-40	Characteristics	Heart sounds	Discussion + PPT slide
40-55	Clinical	Heart block with ECG correlation	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. Power point slides with diagram
2. White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. P-R interval indicates _____
2. In STEMI, ----- segment is elevated

Assignment

1. Draw & label ECG
2. Briefly discuss about heart sounds.

Lesson Plan: CVS (3)

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Blood vessels
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of blood
Venue	Lecture Gallery 3
Teacher	Dr. Tania sultana, Assistant Professor

Learning Objectives

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

1. Functional classification of blood vessels
2. Pressure, flow & resistance
3. Impulse generation & conduction
4. Control of blood flow
5. Exchange of fluid

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding Blood vessels	Open discussion
5-20	Introduction & review	Classification of blood vessels	PPT slide
20-35	Correlation	Correlation of pressure, flow & resistance with flow of blood	Discussion + PPT slide
35-45	Control	Control of blood flow	PPT slide + Questioning
45-55	Process	Fluid exchange through capillary membrane	PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. Power point slides with diagram
2. White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Aorta is an example of _____.
2. Length of vessel is _____ to the blood flow.

Assignment

1. Classify blood vessels
2. How blood flow is controlled in vessels?

Lesson Plan: CVS (4)

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Cardiac output, venous return
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of cardiac cycle
Venue	Lecture Gallery 3
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Definition
2. Fick's principle
3. Factors
4. Pulse

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding cardiac cycle with cardiac output & venous return	Open discussion
5-20	Introduction & review	Definition of cardiac output, SV, ESV, EDV, EF, Venous return	PPT slide
20-35	Measurement	Fick's principle	Discussion + PPT slide
35-45	Factors	Factors affecting CO, VR	PPT slide + Questioning
45-55	Characteristics	Definition & characteristics of pulse	PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. Power point slides with diagram
2. White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. CO is about _____
2. SV = _____ - _____

Assignment

1. Write the Fick' principle
2. What are the characteristics of pulse?

Lesson Plan: CVS (5)

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	BP, PR
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of CO
Venue	Lecture Gallery 3
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Definition of BP
2. Types of BP
3. Regulation of BP
4. Peripheral resistance with factors

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding CO & BP	Open discussion
5-20	Introduction & review	Definition & types of BP	PPT slide
20-35	Measurement	Measurement technique of BP	Discussion + PPT slide
35-45	Regulation	Regulation of BP	PPT slide + Questioning
45-55	Factors	Definition & factors affecting PR	PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. Power point slides with diagram
2. White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. BP = _____ x _____
2. Regulation of BP is of _____ types

Assignment

1. Briefly discuss about BP regulation.
2. Define PR. Name the factors affecting it.

Lesson Plan: CVS (6)

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Heart rate, Arrhythmias, Shock
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of BP, HR, Shock
Venue	Lecture Gallery 3
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

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

1. Heart rate with regulation
2. Arrhythmia with types
3. Shock with compensatory mechanisms

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding Heart rate, Arrhythmias, Shock	Open discussion
5-20	Introduction & review	Factors affecting HR with regulation	PPT slide
20-35	Cause	Arrhythmias with causes	Discussion + PPT slide
35-55	Shock	Definition, types, compensation	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. Power point slides with diagram
2. White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Tachycardia means HR is _____
2. Shock causes ----- perfusion.

Assignment

1. Define & classify shock.
2. How heart rate is regulated?

Lesson Plan Portfolio: Respiratory System

Course: Physiology • MBBS 1st Year (Phase I)

Faculty: Dr. Tania Sultana & Dr. Dipan Baidya

Lesson Plan: Respiratory (1.1) — Mechanisms of Respiration & Ventilation

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic Topic	Mechanisms of Respiration & Ventilation
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of respiration phases
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Tania Sultana, Assistant Professor

Expected Learning Objectives

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

- Definition of respiration
- Differences between pulmonary & alveolar ventilation.
- Mechanism of respiration.
- Lung volumes & capacities.
- Dead space.
- Lung function tests.

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding respiration	Open discussion
5-25	Introduction & review	Inspiration & expiration, mechanism of respiration	PPT slide
25-40	Differences	Differences between pulmonary & alveolar ventilation	Open discussion + PPT slide
40-55	Describe	Dead space	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. Primary muscle of respiration is _____
2. Dead spaces are _____ & _____

Post-Class Academic Assignment:

- Write the mechanism of respiration.
- Define & classify dead space.

Lesson Plan: Respiratory (1.2) — Lung Volumes, Capacities & Spirometry

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic	Lung Volumes, Capacities & Spirometry
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of respiration phases & dead space
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Tania Sultana, Assistant Professor

Expected Learning Objectives

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

- Definition of respiration
- Differences between pulmonary & alveolar ventilation.
- Mechanism of respiration.
- Lung volumes & capacities.
- Dead space.
- Lung function tests.

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding respiration phases	Open discussion
5-25	Introduction & review	Pulmonary volumes	PPT slide
25-40	Describe	Pulmonary capacities	Open discussion + PPT slide
40-55	Clinical aspects	Lung function tests	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. TLC is _____
2. FRC is _____

Post-Class Academic Assignment:

- Shortly discuss about spirometry.
- Name the lung function tests.

Lesson Plan: Respiratory (2.1) — Gas Composition & Respiratory Membrane

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic Topic	Gas Composition & Respiratory Membrane
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of spirometry
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Tania Sultana, Assistant Professor

Expected Learning Objectives

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

- Composition of atmospheric air.
- Composition of alveolar, inspired & expired air.
- Respiratory membrane.
- Diffusion of gases through respiratory membrane.
- Pulmonary circulation.
- Ventilation-perfusion ratio.

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding spirometry	Open discussion
5-25	Introduction & review	Composition of atmospheric air	PPT slide
25-40	Composition	Composition of alveolar, inspired & expired air	Open discussion + PPT slide
40-55	Describe	Respiratory membrane details	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. Inert gases present in atmospheric air are _____, _____ & _____
2. Dead spaces are _____ & _____

Post-Class Academic Assignment:

- Write the composition of atmospheric air.
- Draw & label respiratory membrane.

Lesson Plan: Respiratory (2.2) — Gas Diffusion & Ventilation-Perfusion Ratio

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic	Gas Diffusion & Ventilation-Perfusion Ratio
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of spirometry
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Tania Sultana, Assistant Professor

Expected Learning Objectives

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

- Composition of atmospheric air.
- Composition of alveolar, inspired & expired air.
- Respiratory membrane.
- Diffusion of gases through respiratory membrane.
- Pulmonary circulation.
- Ventilation-perfusion ratio.

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding spirometry	Open discussion
5-25	Introduction & review	Diffusion of gases through respiratory membrane	PPT slide
25-40	Composition	Pulmonary circulation with peculiarities	Open discussion + PPT slide
40-55	Describe	Ventilation perfusion ratio	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. Diffusion of gas is _____ to the membrane thickness
2. V-Q ratio is more in _____ of lung

Post-Class Academic Assignment:

- Write the process of diffusion of gases through respiratory membrane.
- What is ventilation perfusion ratio.

Lesson Plan: Respiratory (3.1) — Oxygen & Carbon Dioxide Transport Mechanics

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic Topic	Oxygen & Carbon Dioxide Transport Mechanics
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of respiratory membrane with gas diffusion
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Dipan Baidya, Associate Professor

Expected Learning Objectives

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

- Transport of oxygen
- Transport of carbon di oxide
- O₂-Hb curve
- Bohr effect, Haldane effect, Chloride shift.

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding respiratory membrane with gas diffusion	Open discussion
5-35	Introduction & review	Transport of oxygen	PPT slide
35-55	Differences	Transport of carbon di oxide	Open discussion + PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. O₂ is transported in _____ forms

2. CO₂ is transported in _____ forms

Post-Class Academic Assignment:

- Write the oxygen transport system
- Write the carbon di oxide transport system

Lesson Plan: Respiratory (3.2) — O₂-Hb Curve & Physiological Dissociation Shifts

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic	O ₂ -Hb Curve & Physiological Dissociation Shifts
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of O ₂ & CO ₂ transport
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Dipan Baidya, Associate Professor

Expected Learning Objectives

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

- Transport of oxygen
- Transport of carbon di oxide
- O₂-Hb curve
- Bohr effect, Haldane effect, Chloride shift.

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding O ₂ & CO ₂ transport	Open discussion
5-35	Curve	O ₂ -Hb dissociation curve	PPT slide
35-55	Differences	Bohr effect, Haldane effect, Chloride shift	Open discussion + PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. O₂-Hb dissociation curve is _____ shape
2. Affinity of Hb is more to _____

Post-Class Academic Assignment:

- Draw & label O₂-Hb dissociation curve
- What is Bohr effect? What is double Bohr effect?

Lesson Plan: Respiratory (4) — Neural & Chemical Regulation of Respiration

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic	Neural & Chemical Regulation of Respiration
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of respiration phases
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Dipan Baidya, Associate Professor

Expected Learning Objectives

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

- Respiratory centers
- Different types of regulation.
- Regulation during exercise

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding respiration phases	Open discussion
5-25	Introduction & review	Respiratory centers details	PPT slide
25-45	Types	Nervous & chemical regulation	Open discussion + PPT slide
45-55	Describe	Regulation during exercise	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. Pacemaker of respiration is _____

2. Respiratory centers are located in _____ & _____

Post-Class Academic Assignment:

- Describe the regulation of respiration
- Write the functions of respiratory centers.

Lesson Plan: Respiratory (5) — Pathophysiology of Hypoxia, Cyanosis & Dyspnea

Field	Detail
Course / Year	Physiology / MBBS 1st year (Phase I)
Corrected Topic	Pathophysiology of Hypoxia, Cyanosis & Dyspnea
Duration / Format	60 minutes / Lecture class
Prerequisites	Basic knowledge of respiration regulation
Venue / Room	Lecture Gallery 2
Instructor Faculty	Dr. Dipan Baidya, Associate Professor

Expected Learning Objectives

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

- Hypoxia
- Cyanosis
- Dyspnea, hypercapnia & periodic breathing

Content Outline & Classroom Time Split

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding respiration regulation	Open discussion
5-25	Introduction & review	Hypoxia with types	PPT slide
25-45	Types	Cyanosis with types	Open discussion + PPT slide
45-55	Describe	Dyspnea, hypercapnia & periodic breathing	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Audiovisual Teaching Aids

- PowerPoint slides integrated with anatomical & clinical diagrams.
- Standard white board and markers for real-time physiological equations and step drawing.

Assessment & Performance Evaluation Matrix

Formative (Continuous): Active question-and-answer intervals conducted dynamically throughout the presentation.

Summative Sample MCQs:

1. In cyanosis _____ CO₂ is increased

2. _____ hypoxia is 100% respond to O₂ therapy.

Post-Class Academic Assignment:

- Define hypoxia with types.
- Define cyanosis with types.

Systemic Physiology Lesson Plans

Module: Renal System

Curriculum Requirement: MBBS 2nd Year (Phase I)

Topic: Renal (1) — Renal functions, Nephron structure & Renal circulation

Course:	Physiology	Duration:	60 minutes
Year:	MBBS 2nd year (Phase I)	Format:	Lecture class
Venue:	Lecture Gallery 2	Prerequisites:	Basic knowledge of renal functions
Teacher:	Dr. Tania Sultana, Assistant Professor		

Learning Objectives

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

- Functions of kidney
- Nephron: types & structure.
- Renal circulation: peculiarities with functional importance.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding renal functions	Open discussion
5-25	Introduction & review	Functions of kidney	PPT slide
25-40	Types	Nephron : types & structure	Open discussion + PPT slide
40-55	Describe	Renal circulation	PPT slide Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment: Ask questions during lecture

Summative Assessment (Example MCQs):

1. Number of nephrons are _____
2. Renal circulation is a _____ pressure bed.

Assignment

- Write the functions of kidneys.
- Discuss about renal circulation.

Topic: Renal (2) — Urine formation & Glomerular Filtration Rate (GFR)

Course:	Physiology	Duration:	60 minutes
Year:	MBBS 2nd year (Phase I)	Format:	Lecture class
Venue:	Lecture Gallery 2	Prerequisites:	Basic knowledge of renal functions
Teacher:	Dr. Dipan Baidya, Associate Professor		

Learning Objectives

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

- Formation of urine
- GFR: measurement & determinants
- Autoregulation of GFR

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding renal functions	Open discussion
5-25	Introduction & review	Formation of urine	PPT slide
25-40	Types	GFR: measurement & determinants	Open discussion + PPT slide
40-55	Describe	Autoregulation of GFR	PPT slide Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment: Ask questions during lecture

Summative Assessment (Example MCQs):

1. GFR is _____ / hour
2. Urine = _____ - _____ + _____.

Assignment

- How urine is formed?
- Write the measurement of GFR.

Topic: Renal (3) — Tubular reabsorption, secretion & plasma clearance

Course:	Physiology	Duration:	60 minutes
Year:	MBBS 2nd year (Phase I)	Format:	Lecture class
Venue:	Lecture Gallery 2	Prerequisites:	Basic knowledge of urine formation
Teacher:	Dr. Dipan Baidya, Associate Professor		

Learning Objectives

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

- Tubular reabsorption & secretion
- Transport, threshold, tubular load
- Plasma load, plasma clearance & diuresis

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding urine formation.	Open discussion
5-25	Introduction & review	Tubular reabsorption & secretion	PPT slide
25-40	Types	Transport, threshold, tubular load	Open discussion + PPT slide
40-55	Describe	Plasma load, plasma clearance & diuresis	PPT slide Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment: Ask questions during lecture

Summative Assessment (Example MCQs):

1. Glucose is reabsorbed _____% in PCT
2. Diuresis is of _____ types

Assignment

- What is tubular load?
- Write the tubular reabsorption in PCT.

Topic: Renal (4) — Urine Concentration & Dilution Mechanisms

Course:	Physiology	Duration:	60 minutes
Year:	MBBS 2nd year (Phase I)	Format:	Lecture class
Venue:	Lecture Gallery 2	Prerequisites:	Basic knowledge of urine formation
Teacher:	Dr. Dipan Baidya, Associate Professor		

Learning Objectives

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

- Formation of concentrated urine
- Formation of diluted urine

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding urine formation.	Open discussion
5-35	Discussion	Formation of concentrated urine	PPT slide
35-55	Discussion	Formation of diluted urine	Open discussion + PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment: Ask questions during lecture

Summative Assessment (Example MCQs):

1. Urine pH is _____
2. Osmolarity of urine is _____

Assignment

- How concentrated urine is formed?
- How diluted urine is formed?

Topic: Renal (5) — Micturition Reflex & Abnormalities

Course:	Physiology	Duration:	60 minutes
Year:	MBBS 2nd year (Phase I)	Format:	Lecture class
Venue:	Lecture Gallery 2	Prerequisites:	Basic knowledge of urine formation
Teacher:	Dr. Dipan Baidya, Associate Professor		

Learning Objectives

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

- Micturition reflex
- Abnormalities of micturition

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding urine formation.	Open discussion
5-35	Discussion	Micturition reflex	PPT slide
35-55	Discussion	Abnormalities of micturition	Open discussion + PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation.

Assessment & Evaluation

Formative Assessment: Ask questions during lecture

Summative Assessment (Example MCQs):

1. Daily urine output is _____
2. Micturition center is in _____

Assignment

- What is micturition reflex?
- What are the abnormalities of micturition?

Physiology Lesson Plans Portfolio

Gastrointestinal Tract (GIT) Module

Lesson Plan: GIT (1)

Field Details

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic	Physiological Anatomy, Enteric Nervous System & Local GIT Hormones
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of GI anatomy
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

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

- Describe the physiological anatomy of the gastrointestinal (GI) tract.
- Explain the organization and components of the Enteric Nervous System.
- Enlist local hormones of the GIT, highlighting their functions and regulation.

Content Outline and Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding GI tract	Open discussion
5-25	Introduction & review	Physiological anatomy of GI tract	PPT slide
25-40	Differences	Enteric nervous system	Open discussion + PPT slide
40-55	Describe	Local hormones with functions & regulations	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive anatomical diagrams
2. White board & marker for structural charts and core dynamic explanations

Assessment / Evaluation

Formative Assessment:

- Intermittent interactive questioning during the lecture block.

Summative Assessment (Example MCQs):

1. Local hormones of GIT are of _____ types.
2. Enteric nervous system consists of _____ plexuses.

Assignment

- Classify local hormones of the gastrointestinal system.
- Write comprehensive functional highlights of the enteric nervous system.

Lesson Plan: GIT (2)

Field Details

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic	Movements of GIT, GI Reflexes & Functions of GI Organs
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of GI anatomy
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

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

- Describe the various functional movements of the GIT.
- Explain the physiological pathways and types of gastrointestinal reflexes.
- Detail the key physiological functions of specific gastrointestinal organs.

Content Outline and Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding GI tract	Open discussion
5-25	Introduction & review	Movements of GI tract	PPT slide
25-40	Differences	GI reflexes	Open discussion + PPT slide
40-55	Describe	Functions of GI organs	PPT slide + Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with animated physiological movement mappings
2. White board & marker for flowcharting reflex arcs and organ lists

Assessment / Evaluation

Formative Assessment:

- Ongoing oral questioning and student interaction prompts.

Summative Assessment (Example MCQs):

1. Movements of GIT are of _____ types.
2. Oesophagus has _____ types of peristalsis.

Assignment

- Discuss the mechanical movements of the GI tract in detail.
- Classify and describe the various physiological GI reflexes.

PHYSIOLOGY LESSON PLANS

Endocrine System Module

MBBS 1st Year (Phase I)

Department of Physiology

Topic: Hormone (1)

Lecture Focus: General Principles of Endocrinology

I. Field Details

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Introduction to Hormones & Control Mechanisms
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of endocrine glands, names of their hormones and differences between endocrine & exocrine secretion.
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

II. Learning Objectives

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

1. Definition of hormone.
2. Differences between endocrine and exocrine glands.
3. Classification of hormone.
4. Mechanism of action of different hormones.
5. Regulation of secretion of different hormones.

6. Correlation of function of hormones with their mechanism of action.

III. Content Outline and Time Allocation

Time (min)	Activity	Content / Key points	Teaching method
0-5	Gaining attention	Correlation with previous knowledge regarding hormones	Open discussion
5-10	Introduction & review	Name of endocrine glands, Definition of hormone	PPT slide
10-20	Differences	Differences between endocrine and exocrine glands	Open discussion + PPT slide
20-30	Types	Classification of hormone	PPT slide Questioning
30-40	Functions	Mechanism of action of hormones	Diagram based discussion
40-50	Regulation	Regulation of hormonal secretion	Diagram based + PPT slide
50-55	Correlation	Correlation between the types of hormone with their functions	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

IV. Resources and Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

V. Assessment / Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Peptide hormones act on _____ of a cell
2. Posterior pituitary hormones are _____ & _____

VI. Assigned Homework

- Write the mechanism of action of different hormones.
- How pituitary hormones are regulated?

Topic: Hypothalamic & Pituitary hormones (2)

Lecture Focus: Hypothalamic & Pituitary Axis Coordination

I. Field Details

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Hypothalamic hormones, pituitary hormones
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of glands, name of hormones secreted
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

II. Learning Objectives

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

1. Name of hypothalamic and pituitary hormones.
2. Functions of them.
3. Mechanism of action of different hormones.
4. Regulation of secretion of different hormones.
5. Clinical correlation.

III. Content Outline and Time Allocation

Time (min)	Activity	Content / Key points	Teaching method
0-5	Gaining attention	Correlation with previous knowledge	Open discussion
5-10	Introduction & review	Name of hypothalamic & pituitary hormones	PPT slide
10-20	Functions	Functions of them	Open discussion + PPT slide
20-30	Mechanism	Mechanism of hormones	PPT slide Questioning
30-40	Regulation	Regulation of hormonal secretion	Diagram based + PPT slide
40-55	Correlation	Correlation between the types of hormone with their functions	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

IV. Resources and Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

V. Assessment / Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. GH hormones act on _____ of a cell
2. Posterior pituitary hormones are _____ & _____

VI. Assigned Homework

- Write the mechanism of action of growth hormones.
- How pituitary hormones are regulated?

Topic: Thyroid hormones (3)

Lecture Focus: Thyroid Hormone Biosynthesis & Control Mechanisms

I. Field Details

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Thyroid hormones synthesis, transport & metabolism
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of endocrine gland, names of their hormones.
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

II. Learning Objectives

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

1. Location of thyroid gland and the name of hormones secreted.
2. Biosynthesis of thyroid hormones.
3. Transport & functions of thyroid hormones.
4. Mechanism of action of thyroid hormones.
5. Regulation of secretion of different hormones.
6. Correlation of function of hormones with their mechanism of action.

III. Content Outline and Time Allocation

Time (min)	Activity	Content / Key points	Teaching method
0-5	Gaining attention	Correlation with previous knowledge regarding hormones	Open discussion
5-10	Introduction & bio	Name of hormones & Biosynthesis of thyroid hormones	PPT slide
10-20	Functions	Transport & functions of thyroid hormones	Open discussion + PPT slide
20-30	Mechanism	Mechanism of action of hormones	Diagram based discussion
30-40	Regulation	Regulation of hormonal secretion	Diagram based + PPT slide
40-55	Correlation	Clinical correlation between the hormones with their functions	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

IV. Resources and Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

V. Assessment / Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Thyroid hormones act on _____ of a cell
2. Serum calcium is decreased by _____

VI. Assigned Homework

- Write the mechanism of action of TSH.
- How pituitary hormones are regulated?

Topic: Parathyroid hormones (4)

Lecture Focus: Parathyroid Regulation & Calcium Homeostasis

I. Field Details

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Parathyroid hormone, Calcitonin & Vitamin D balance
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of endocrine glands, names of their hormones.
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

II. Learning Objectives

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

1. Location of parathyroid glands and the name of hormones secreted.
2. Transport & functions of parathyroid/thyroid homeostatic hormones.
3. Mechanism of action of these regulatory factors.
4. Regulation of secretion of different hormones.
5. Calcium homeostasis principles.

III. Content Outline and Time Allocation

Time (min)	Activity	Content / Key points	Teaching method
0-5	Gaining attention	Correlation with previous knowledge regarding hormones	Open discussion
05-15	Functions	Transport & functions of calcium regulating hormones	Open discussion + PPT slide
15-25	Mechanism	Mechanism of action of hormones	Diagram based discussion
25-35	Regulation	Regulation of hormonal secretion	Diagram based + PPT slide
35-55	Calcium balance	Calcium homeostasis with clinical correlation	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

IV. Resources and Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

V. Assessment / Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. PTH act by _____ system
2. Concentration of calcium is maintained by _____ & _____

VI. Assigned Homework

- Write the mechanism of action of PTH.
- How PTH are regulated?

Topic: Adrenocortical hormones (5.1)

Lecture Focus: Adrenal Cortex Pathways & Functional Profiles

I. Field Details

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Adrenocortical steroid synthesis & physiological pathways
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of endocrine glands, names of their hormones.
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

II. Learning Objectives

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

1. Location of adrenal glands and the name of hormones secreted.
2. Functions of adrenal hormones.
3. Mechanism of action of adrenal hormones.
4. Regulation of secretion of different hormones.
5. Clinical correlation of function of hormones.

III. Content Outline and Time Allocation

Time (min)	Activity	Content / Key points	Teaching method
0-10	Gaining attention	Correlation with previous knowledge	Open discussion
10-25	Intro & review	Location and name of adrenal glands & hormones	PPT slide
25-45	Functions	Functions of different adrenal hormones	Open discussion + PPT slide
45-60	Mechanisms	Mechanism of action of hormones	Diagram based discussion

IV. Resources and Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

V. Assessment / Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Cushing syndrome is caused by _____
2. Electrolyte imbalances in Addison's disease are _____ & _____

VI. Assigned Homework

- Write the mechanism of action of mineralocorticoids?
- How adrenal hormones are regulated?

Topic: Adrenocortical hormones (5.2)

Lecture Focus: Clinical Pathology of the Adrenal Cortex

I. Field Details

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Pathophysiology of Addison's disease & Cushing syndrome
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of endocrine glands, names of their hormones.
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

II. Learning Objectives

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

1. Location of adrenal glands and the name of hormones secreted.
2. Functions of adrenal hormones.
3. Mechanism of action of adrenal hormones.
4. Regulation of secretion of different hormones.
5. Clinical correlation of function of hormones with diseases.

III. Content Outline and Time Allocation

Time (min)	Activity	Content / Key points	Teaching method
0-15	Regulation	Regulation of hormonal secretion via HPA axis	Diagram based + PPT slide
15-40	Pathology	Addison's disease and Cushing syndrome presentation	PPT slide
40-55	Correlation	Clinical correlation between the types of hormone with diseases	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

IV. Resources and Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

V. Assessment / Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Cushing syndrome is caused by _____
2. Electrolyte imbalances in Addison's disease are _____ & _____

VI. Assigned Homework

- Write the mechanism of action of mineralocorticoids?
- How adrenal hormones are regulated?

Topic: Endocrine pancreas (6)

Lecture Focus: Pancreatic Hormones & Metabolic Homeostasis

I. Field Details

Course	Physiology
Year	MBBS 1st year (Phase I)
Topic	Insulin, Glucagon & Diabetes Pathophysiology
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of endocrine pancreas, name of their hormones.
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

II. Learning Objectives

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

1. Location & name of hormones of pancreas.
2. Functions of endocrine pancreatic hormones.
3. Mechanism of action of different hormones.
4. Regulation of secretion of different hormones.
5. Pathophysiology of insulin deficiency.

III. Content Outline and Time Allocation

Time (min)	Activity	Content / Key points	Teaching method
0-5	Gaining attention	Correlation with previous knowledge regarding hormones	Open discussion
5-10	Intro & review	Name of endocrine part with respective hormones	PPT slide
10-20	Functions	Functions of hormones (Insulin/Glucagon)	Diagram based discussion
20-30	Mechanism	Mechanism of action of pancreatic hormones	PPT slide Questioning
30-40	Regulation	Regulation of hormonal secretion	Diagram based + PPT slide
40-55	Insulin path	Pathophysiology of insulin deficiency & cell starvation	PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

IV. Resources and Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

V. Assessment / Evaluation

Formative Assessment:

Ask questions during lecture

Summative Assessment (Example MCQs):

1. Insulin decreases glucose in _____ way
2. Insulin deficiency causes _____ & _____ in metabolism

VI. Assigned Homework

- Write the mechanism of action of insulin.
- What is the pathophysiology of insulin deficiency?

Physiology Lesson Plans Portfolio

Module: Reproductive Physiology & Mammogenesis

Target: MBBS 2nd Year (Phase I)

Topic: Male Reproductive System (1.1)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Core Subject Topic	Reproductive physiology
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of male reproductive organs, puberty, hormones, gonads
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

- Name of male reproductive organs.
- Puberty.
- Hormones required.
- Secondary sex characteristics of male.
- Spermatogenesis

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge	Open discussion
5-10	Introduction & review	Name of reproductive organs	PPT slide
10-35	Characteristics	Puberty: Hormones required	Open discussion + PPT slide
35-55	Process	Secondary sex characteristics of male.	PPT slide Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Male age of puberty is _____
2. Two external secondary sex characteristics are _____ & _____

Assignment / Independent Study:

- Write the secondary sex characteristics in male.
- What is puberty?

Topic: Male Reproductive System (1.2)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Core Subject Topic	Reproductive physiology
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of male reproductive organs, puberty, hormones, gonads
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

- Name of male reproductive organs.
- Puberty.
- Hormones required.
- Secondary sex characteristics of male.
- Spermatogenesis

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
05-20	Process	Spermatogenesis	PPT slide Questioning
20-30	Functions	Mechanism of action of testosterone	Diagram based discussion
30-45	Regulation	Regulation of spermatogenesis	Diagram based + PPT slide
45-55	Correlation	Correlation between the puberty, spermatogenesis & secondary sex characteristics	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Testosterone is secreted by _____
2. Temperature required for spermatogenesis is _____

Assignment / Independent Study:

- Write the process of spermatogenesis.
- What are the functions of testosterone?

Topic: Female reproductive System (2.1)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Core Subject Topic	Female Reproductive Physiology
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of female reproductive organs, hormones, gonads, menstruation
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

- Name of female reproductive organs.
- Ovarian hormones.
- Ovulation
- Secondary sex characteristics of female.
- Menstruation

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge	Open discussion
5-30	Introduction & review	Name of female reproductive organs, ovarian hormones	PPT slide
30-45	Characteristics	Secondary sex characteristics of female.	Open discussion + PPT slide
45-55	Process	Ovulation	PPT slide Questioning
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Oestrogen is secreted by _____
2. Two external female secondary sex characteristics are _____ & _____

Assignment / Independent Study:

- Write the mechanism of action of progesterone
- What is ovulation?

Topic: Female reproductive System (2.2)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Core Subject Topic	Female Reproductive Physiology
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of female reproductive organs, hormones, gonads, menstruation
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

- Name of female reproductive organs.
- Ovarian hormones.
- Ovulation
- Secondary sex characteristics of female.
- Menstruation

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-10	Definition	Menstruation	PPT slide Questioning
10-30	Functions	Mechanism of action of ovarian hormones	Diagram based discussion
30-40	Regulation	Regulation of menstruation	Diagram based + PPT slide
40-55	Correlation	Correlation between ovarian hormones & menstruation with menopause	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Menstrual phase occurs within_____
2. Average age of menopause_____

Assignment / Independent Study:

- Write the mechanism of action of oestrogen.
- How menstruation is regulated?

Topic: Placenta & Mammogenesis (3.1)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Core Subject Topic	Placenta & mammogenesis
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of placenta with functions.
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

- Location of placenta and the name of hormones secreted.
- Functions of placental hormones.
- Mammogenesis with hormones
- Lactation

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding placenta	Open discussion
5-10	Hormones	Name of placental hormones	PPT slide
10-40	Functions	Functions of placental hormones	Open discussion + PPT slide
40-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Placenta appears at _____ weeks of gestation
2. Main hormone of placenta is _____ (3) hormones

Assignment / Independent Study:

- Write the functions of placenta.
- How placenta helps in pregnancy?

Topic: Placenta & Mammogenesis (3.2)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Core Subject Topic	Placenta & mammogenesis
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of location of placenta with functions.
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

- Location of placenta and the name of hormones secreted.
- Functions of placental hormones.
- Mammogenesis with hormones
- Lactation

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
05-15	Process	Mammogenesis	Diagram based discussion
15-40	Influence	Hormonal influence of mammogenesis	Diagram based + PPT slide
40-55	Correlation	Correlation between mammogenesis & lactation	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources & Teaching Aids

- Power point slides with diagram
- White board & marker for the explanation of mechanism of hormones.

Assessment & Evaluation

Formative: Ask questions during lecture

Summative (Example MCQs):

1. Lactation is controlled by _____ hormone
2. Mammogenesis is controlled by _____ (3) hormones

Assignment / Independent Study:

- Write the steps of mammogenesis.
- How lactation regulated?

Physiology Lesson Plans Portfolio

Course: Physiology | **Year:** MBBS 2nd Year (Phase I)
Module: Central & Autonomic Nervous System | **Venue:** Lecture Gallery 2

Lesson Plan: Neuron, Nerve fiber, NT (1)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Nerve Properties & Neurotransmitters
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of unit of nervous system, neurotransmitter
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Definition of Neuron, nerve fiber & neurotransmitter.
2. Properties of each.
3. Function of each.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding functional organization of CNS	Open discussion
5-15	Introduction & review	Definition of neuron, nerve fiber & NT	PPT slide
15-30	Properties	Properties of neuron, nerve fiber & NT	Open discussion + PPT slide
30-45	Function	Functions of neuron, nerve fiber & NT	PPT slide + Questioning
45-55	Lesion	Injuries to the nerve fiber	Diagram based discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Functional unit of nervous system is _____

Q2. Slow & fast pain fibers are _____ & _____ respectively.

Home Assignment:

- Write the properties of neurotransmitter?
- Classify nerve fiber.

Lesson Plan: Synapse (1)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Synaptic Transmission & NMJ Dynamics
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of unit of nervous system, neurotransmitter
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Definition of synapse.
2. Properties of synapse.
3. Function of synapse.
4. Correlation between synapse & neurotransmitters (NT).

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding synapse	Open discussion
5-15	Introduction & review	Definition of synapse	PPT slide
15-30	Properties	Properties of synapse	Open discussion + PPT slide
30-45	Function	Functions of synapse	PPT slide + Questioning
45-55	Correlation	Correlation between synapse & NT	Diagram based discussion + PPT
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Cause of synaptic delay is _____

Q2. Neuromuscular junction releases _____ as NT.

Home Assignment:

- Write the properties of synapse?
- Write the events of neuromuscular junction.

Lesson Plan: Ascending tracts (2)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Sensory Pathways & Ascending Tracts
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of sensory pathways
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

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

1. Sensory receptor with properties.
2. Functions of cerebral cortex.
3. Ascending tracts anatomy and physiology.
4. Lesions of ascending tracts.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-10	Gaining attention	Correlation with previous knowledge regarding receptor & its properties	Open discussion
5-10	Definition	Tracts overview	PPT slide
10-35	Ascending tract	Name & functions of ascending pathways	Open discussion + PPT slide
35-45	Disorders	Lesions of ascending tracts	Diagram based + PPT slide
45-55	Correlation	Correlation between the ascending tracts & movements	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Dorsal column tracts are _____

Q2. Pain carrying tracts are _____ & _____.

Home Assignment:

- Write the pathway of spinothalamic tract.
- What are the features of dorsal column lesion?

Lesson Plan: Reflex (3)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Reflex Arc, Muscle Spindle & Motor Tone
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of reflex, motor movements
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Definition of reflex.
2. Reflex arc components.
3. Types of reflex (including extensor & crossed extensor).
4. Muscle spindle structure and function.
5. Physiology of motor tone maintenance.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding reflex	Open discussion
5-15	Introduction & review	Reflex arc and pathways	PPT slide
15-35	Types	Classification of reflex, extensor & crossed extensor reflex	Open discussion + PPT slide
35-45	Functions	Functions of muscle spindle	PPT slide + Questioning
45-55	Mechanism	Muscle tone maintenance systems	Diagram based discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Components of reflex arc are _____

Q2. Root value of knee jerk is _____ & _____.

Home Assignment:

- Write the properties of reflex.
- How muscle tone is maintained?

Lesson Plan: Descending tracts (4)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Motor Pathways, UMN/LMN Lesions & Hemisection
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of motor pathways
Venue	Lecture Gallery 2
Teacher	Dr. Tania Sultana, Assistant Professor

Learning Objectives

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

1. Pyramidal tract & extrapyramidal tract functions.
2. Upper motor neuron (UMN) & lower motor neuron (LMN) features.
3. Clinical lesions of UMN and LMN.
4. Spinal cord hemisection (Brown-Séquard syndrome).

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding motor movements	Open discussion
5-15	Introduction & review	Pyramidal & extra pyramidal tracts with functions	PPT slide
15-25	Definition	UMN & LMN differentiation	Open discussion + PPT slide
25-40	Lesions	UMNL & LMNL signs and symptoms	PPT slide + Questioning
40-50	Effects	Effects of spinal cord hemisection	Diagram based discussion
50-55	Correlation	Correlation between descending tracts and motor control	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Pyramidal tract originates from _____

Q2. Deep reflexes are _____ in UMNL.

Home Assignment:

- Write the features of UMNL & LMNL.
- What are the differences between pyramidal & extrapyramidal tracts?

Lesson Plan: Basal Ganglia & limbic system (5)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Basal Ganglia Nuclei & Limbic Circuitry
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of basal ganglia nuclei & limbic system components
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Position & nuclei of basal ganglia.
2. Functions of basal ganglia.
3. Lesions of basal ganglia.
4. Components of the limbic system.
5. Functions of the limbic system.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding basal ganglia & limbic system	Open discussion
5-15	Introduction & review	Position & nuclei of basal ganglia	PPT slide
15-30	Lesions	Basal ganglia lesions and disorders	Open discussion + PPT slide
30-40	Components	Limbic system components	PPT slide + Questioning
40-50	Functions	Functions of limbic system structures	Diagram based discussion
50-55	Correlation	Correlation between the basal ganglia and limbic system	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Nuclei of corpus striatum are _____

Q2. Two limbic system lesions are _____ & _____.

Home Assignment:

- Write the lesions of basal ganglia?
- What are the components of limbic system?

Lesson Plan: Cerebellum (5)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Cerebellar Circuits, Error Control & Disorders
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of cerebellar position, functions, motor movements
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Position & divisions of cerebellum.
2. Functions of cerebellum.
3. Error control mechanism of motor activity.
4. Neuronal circuit of cerebellum.
5. Cerebellar clinical disorders.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding cerebellum	Open discussion
5-10	Introduction & review	Position & divisions of cerebellum	PPT slide
10-20	Mechanism	Error control mechanism of motor activity	Open discussion + PPT slide
20-30	Circuits	Neuronal circuits of cerebellum	PPT slide + Questioning
30-40	Functions	Cerebellar physiological functions	Diagram based discussion
40-50	Disorders	Cerebellar disorders & ataxia signs	Diagram based + PPT slide
50-55	Correlation	Correlation between the cerebellum and motor coordination	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

- Q1. Deep nuclei of cerebellum are _____
- Q2. Tests of cerebellar disorders in upper limb are _____ & _____.

Home Assignment:

- Write the error control mechanism of the cerebellum?
- What are the functions of cerebellum?

Lesson Plan: Thalamus, Reticular formation & limbic system (5)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Thalamic Nuclei, RAS & Sleep-Wake Rhythm
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of sleep-wake, limbic system
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Nuclei of limbic system & thalamus.
2. Functions of limbic system, reticular formation & thalamus.
3. Sleep-wake cycle physiology.
4. Punishment & reward centers of the brain.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding thalamus, RAS & limbic system	Open discussion
5-10	Introduction & review	Components of the structural networks	PPT slide
10-20	Functions	Functions and relay gates of the thalamus	PPT slide + discussion
20-30	RAS Functions	Functions of the reticular activating system (RAS)	PPT slide + discussion
30-40	Limbic Functions	Functions of the limbic system integration	PPT slide + discussion
40-50	Cycle	Physiology of the sleep-wake cycle	Diagram based + PPT slide + discussion
50-55	Special feature	Punishment & reward center functions	Open discussion + PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Center of limbic system is _____

Q2. Sleep wake cycle is maintained by _____.

Home Assignment:

- Write the functions of thalamus?
- Draw and label limbic system.

Lesson Plan: Hypothalamus & temperature (6)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Hypothalamic Integration & Thermoregulation
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of hypothalamus, functions, temperature
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Position & nuclei of the hypothalamus.
2. Homeostatic functions of the hypothalamus.
3. Core and shell temperature and its types.
4. Heat gain & heat loss biological mechanisms.
5. Central regulation of body temperature.

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding hypothalamus & temperature	Open discussion
5-15	Functions	Nuclei & functions of the hypothalamus	PPT slide
15-20	Definition	Temperature types (Core vs. Shell)	Open discussion + PPT slide
20-35	Mechanism	Heat gain & heat loss processes	PPT slide + Questioning
35-45	Measurement	Clinical temperature measurement techniques	Diagram based discussion
45-55	Regulation	Hypothalamic regulation of body temperature	Diagram based + PPT slide
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Medial nuclei of hypothalamus is responsible for _____

Q2. Shell temperature is measured in _____ & _____.

Home Assignment:

- Write the heat gain & loss physiological processes?
- What are the functions of hypothalamus?

Lesson Plan: Autonomic nervous system (7)

Field	Detail
Course	Physiology
Year	MBBS 2nd year (Phase I)
Topic / System	Autonomic Nervous System & Stress Response
Duration	60 minutes
Format	Lecture class
Prerequisites	Basic knowledge of autonomic nervous system pathways
Venue	Lecture Gallery 2
Teacher	Dr. Dipan Baidya, Associate Professor

Learning Objectives

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

1. Sympathetic and parasympathetic nervous system structural layouts.
2. Functional differences and organ effects.
3. Physiology of the alarm or stress response (Fight-or-Flight).

Content Outline & Time Allocation

Time (min)	Activity	Content / Key Points	Teaching Method
0-5	Gaining attention	Correlation with previous knowledge regarding ANS divisions	Open discussion
5-10	Introduction & review	Sympathetic & parasympathetic nervous system overview	PPT slide
10-20	Functions	Functions and reciprocal effects of ANS on target visceral organs	Open discussion + PPT slide
20-30	Response	Alarm or stress response mechanics	PPT slide + Questioning
50-55	Correlation	Correlation between the ANS and systemic bodily action	Open discussion
55-60	Summary & assessment	Recap with SBA & MCQ (2/3)	PPT quiz slide

Resources and Teaching Aids

1. PowerPoint slides with descriptive physiological diagrams.
2. Whiteboard & marker for step-by-step mechanism explanations.

Assessment & Evaluation

Formative: Direct interaction and verbal questioning throughout the lecture window.

Summative Example MCQs:

Q1. Effect of sympathetic nerve on heart is _____

Q2. Effect of parasympathetic nerve on sphincters is _____.

Home Assignment:

- Write the functions of the Autonomic Nervous System?
- What is the physiological alarm or stress response?