

Lesson Plan

Name of the Faculty : Rahul Jangra
Discipline : MLT
Year : 1st
Subject : ANATOMY AND PHYSIOLOGY

Lesson Plan Duration : From July 2026 to November 2026

Work Load (Lecture/Practical) per week (n hours): Lecture= 03, Practical= 02

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
1 st	1	Introduction Anatomy & Physiology	1	Study of various parts of body through demonstration
	2	Levels of organization, parts of human body Structure and functions of animal cell.		
	3	Major body division and sectional divisions		
2 nd	4	Various definitions related to anatomy and physiology.	2	Cranial cavity (Brain) Thoracic cavity (Heart and lungs)
	5	Assignment and test		
	6	Basic tissue of the body (Gross structure and functions).		
3 rd	7	Epithelial tissue, structure and function	3	Abdominal cavity (Liver, Gallbladder, spleen, kidney, stomach & intestines) Pelvic cavity (Reproductive organs)
	8	Connective tissue, structure and function		
	9	Muscular tissue, structure and Function.		
4 th	10	Nervous tissue, structure and function	4	Demonstration of basic tissues of the body Epithelial tissue Connective tissue Muscular tissue Nervous tissue
	11	Gross structure, function and classification.		
	12	Bones of appendicular and axial skeleton		
5 th	13	Bones of Pectoral girdle and upper limbs	5	Demonstration of various parts of bones Bones of upper limb - Humerus, radius, ulna, fibula and articulated hand - Scapula and clavicle
	14	Bones of Pelvic girdle and lower limbs		
	15	Joints & Articulations: Types of joints (Structural and functional classification).		

6 th	16	Bones forming major synovial joints (Shoulder, Elbow, wrist, hip, knee, ankle and intervertebral joints).	6	Bones of lower limb - Pelvic/hip bone and femur, tibia, fibula and articulated foot. Bones of Skull and mandible Sternum and ribs Bones of vertebral column
	17	Properties of muscular tissue. Classification, structure and functions of muscles		
	18	- Skeletal muscle		
7 th	19	- Smooth muscle	7	Demonstration of major joints of the body Joints of upper limb - Shoulder joint - Elbow joint - Wrist joint
	20	- Cardiac muscle		
	21	Assignment and test		
8 th	22	Anatomy of heart: External & Internal features of heart, Chambers of heart	8	Joints of lower limb - Hip (pelvic) joint - Knee joint - Ankle joint intervertebral joints
	23	External & Internal features of heart		
	24	Chambers of heart		

9 th	25	Blood vessels attached to various chambers of heart, Coronary vessels & Major arteries and Veins of body	9	Demonstration of structural differences between: - Skeletal muscle - Smooth muscle and - Cardiac muscle
	26	Circulation of Blood: Pulmonary, Coronary and Portal circulation.		
	27	Blood Pressure: Definition of blood pressure, various terms used in Blood pressure, Factors affecting & controlling Blood pressure.		
10 th	28	Test	10	Demonstration of heart
	29	Methods and Apparatus for recording blood pressure		
	30	Introduction to ECG: Basic principles, normal electrocardiogram & grids of ECG paper, electrographic leads, cardiac cycle and Junctional tissues. Patient preparation for ECG recording & care and maintenance of ECG machine.		
11 th	31	Assignment and test	11	Demonstration of Radial pulse examination.
	32	Introduction to Respiratory system and Organs of respiration: Upper and lower respiratory tract		
	33	Nose and Paranasal sinuses		
12 th	34	Nasopharynx and larynx	12	Demonstration of Blood pressure Estimation
	35	Trachea, bronchi		
	36	Lungs		
13 th	37	Lungs	13	Demonstration of ECG recording
	38	Functions and mechanism of Respiratory system		
	39	Gas exchange in lungs.		
14 th	40	Control of respiration.	14	Demonstration of various parts of respiratory system
	41	Basal Metabolic Rate (BMR)		
	42	Respirometry: Procedure, clinical applications & Importance		

15 th	43	Assignment and test	15	Revision of practicals.
	44	Solving of previous question papers		
	45	Solving of previous question papers		
16 th	46	Revision	16	Revision of practicals.
	47	Revision		
	48	Revision		

Government Polytechnic Sector-26 (Panchkula)

Lesson Plan

Name of the Faculty : Miss. Riya

Discipline : Medical Lab Technology

Semester : 1st Sem

Subject : Basic Chemistry

Lesson Plan : Workload (lecture/practical) per week (in hours): Lectures-02, practicals-02

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical Day (1 lab = 2 hours)	Topic
1 st	1 st	Biologically important elements		Glassware Identification - different types, cleaning and preparation of cleaning solution.
	2 nd	Study of atomic number, mass number, atomic mass, equivalent weight & molecular weight.		Standardization, rechecking of volumetric glasswares.
2 nd	3 rd	Importance of Basic chemistry in medical laboratory technology.		Determination of pH of different solutions.
	4 th	Importance of Water quality and Glasswares		Titration of Acid and Base.

		<i>in clinical laboratory:</i>		
<i>3rd</i>	<i>5th</i>	<i>different types of glassware's, use, cleaning, standardization of volumetric glassware</i>		Performing confirmatory tests for a. Carbohydrate –Molisch, b. Protein- Biuret.
	<i>6th</i>	<i>Importance of Water quality and Glasswares in clinical laboratory:</i>		Performing confirmatory tests for a. Carbohydrate –Molisch, b. Protein- Biuret

4 th	7 th	<i>Different types of glassware's, use, cleaning, standardization of volumetric glassware & maintenance.</i> <i>Pipettes - various types and different pipetting techniques.</i>		Identification of Parts of Colorimeter & Spectrophotometer.
	8 th	<i>Biochemical importance of distilled water and deionised water in clinical analysis.</i>		<i>Identification of Parts of Colorimeter & Spectrophotometer.</i>
5 th	9 th	<i>Solution and colloids – importance of colloids in biological system.</i>		Preparation of different types of standards solution.
	10 th	<i>Surface tension, osmosis and viscosity their importance in biological system.</i>		<i>Preparation of different types of standards solution.</i>
6 th	11 th	<i>Importance of organic compounds – in Biological system.</i>		Determination of Absorption maximum of a coloured solution.
	12 th	<i>Basic chemistry of carbohydrates, proteins and lipids - Their nutritional effect in humans.</i>		Viva Voice
7 th	13 th	<i>Physiological importance of Acid & Bases and role of pH in human system.</i>		Viva Voice

	14 th	<i>Oxidation and</i> <i>Reduction reactions –</i> <i>Definition. Preparation of</i> <i>various standard</i> <i>solutions</i>		Revision and file checking
8 th	15 th	<i>definition of</i> <i>primary & secondary</i> <i>standards, SI units and</i> <i>their uses.</i>		Viva Voice
	16 th	<i>Principles of photometry,</i>		Revision and file checking
				Viva Voice
9 th	17 th	<i>Laws of photometry,</i>		Revision and file checking

	18 th	<i>quantification of</i> <i>biomolecules in micro concentration.</i>		Viva Voice Revision and file checking
10 th	19 th	<i>Principles used in determining concentration of</i> <i>molecules with no known weight - preparation of standard graph.</i>		
	20 th	<i>Blood collection for biochemical analysis,</i>		Revision and file checking
11 th	21 st	<i>changes occurring in blood after collection,</i>		Revision and file checking

	22 nd	<i>Management of its disposal. Different types of Hazards- Biological, Chemical, fire, apparatus.</i> <i>Safety measures needed in Basic chemistry and clinical biochemistry laboratory.</i>		Viva Voice
		Assuring		Viva Voice

12 th	23 rd	Good Laboratory Practices (GLP) in Basic chemistry.		
				Revision and file checking
	24 th	Revision		
13 th	25 th			

		<i>Revision</i>
	<i>26th</i>	<i>Revision</i>
<i>14th</i>	<i>27th</i>	<i>Revision</i>
	<i>28th</i>	<i>Revision</i>
<i>15th</i>	<i>29th</i>	<i>Revision</i>

Revision and file checking

Viva Voice

Revision and file checking

Viva Voice

Revision and file checking

Viva Voice

				Revision and file checking
				Viva Voice
	30 th	<i>Revision</i>		Revision and file checking
	31 th	Revision		Viva

Lesson Plan

Name of the faculty. : Expert

Discipline : MLT

Semester : Ist

Subject : Basic Microbiology

Lesson Plan Duration : 16 weeks From July 2026 to November 2026

Work Load (Lecture/Practical) per week (in hours): 3+6

Week	Theory		Practical	
	Lecture day		Practical day	Topics
1	1	Definition, history, relationship of microorganisms to man.	1	1. Demonstration of safety rules (Universal precautions) in a microbiology laboratory. 2. Preparation of cleaning agents and techniques of cleaning glasswares.
	2	Safety guideline in a microbiology laboratory. Universal precautions.		
	3	Bio-safety cabinets: principle,		
2	4	Types of bio-safety cabinets and their applications	2	1. Preparation of materials for sterilization in an autoclave and hot air oven. 2. Sterilization in autoclave and hot air oven and placing of the sterilization indicators.
	5	Classification of micro-organisms		
	6	Morphology of Bacteria, Bacterial cell wall		
3	7	Physiology of bacteria, Cell wall structures	3	1. Sterilization by filtration by membrane method. 2. Handling and care of different types of microscopes.
	8	Bacterial growth and nutrition		
	9	Revision		
4	10	Physical methods of sterilization: autoclave and hot air oven,	4	1. Staining techniques: Gram, Albert's staining, 2. Ziehl Neelson staining, Capsule and
	11	sterilization control and sterilization indicators.		
	12	Sterilization by radiation and filtration (membrane)		
5	13	Chemical methods of Sterilization: Antiseptics and disinfectants-	5	1. Bacterial spore staining.

	14	propertie of common Antiseptics and disinfectants (e.g. Formaldehyde, Ethylene oxide, phenol compounds, Alcohol, hypochlorite).		2. Demonstration of bacterial motility by hanging drop technique
	15	Uses of common Antiseptics and disinfectants (e.g. Formaldehyde, Ethylene oxide, phenol compounds, Alcohol, hypochlorite).		
6	16	Revision	6	Preparation of culture media: 1. Nutrient agar, 2. Blood agar,
	17	Test		
	18	Definition of Phenol coefficient and determination Phenol coefficient by Rideal Walker method.		
7	19	Handling of a compound microscope	7	Preparation of culture media: 1. Chocolate agar, 2. MacConkey agar,.
	20	Care and maintenance of different parts of a compound microscope		
	21	Principle of working of fluorescent microscope.		
8	22	Staining techniques: Method of smear preparation.	8	Preparation of culture media: 1. DCA 2. XLD and Peptone water.
	23	staining of capsule.		
	24	Differential staining methods: Gram staining		
9	25	Albert's staining	9	1. Isolation of organisms in pure culture 2. Study of colony characteristics
	26	AFB staining		
	27	Preparation of staining solutions and their storage.		
10	28	Definition, synthetic media.,	10	1. Demonstration of haemolysis on blood agar 2. Preparation of cleaning agents and techniques of cleaning glasswares.
	29	Definitionnon-synthetic media.,		
	30	Types of culture media: liquid media		
11	31	Types of culture media: solid media	11	1. Preparation of materials for sterilization in an autoclave and hot air oven. 2. Sterilization in autoclave and hot air oven and placing of the sterilization indicators.
	32	routine laboratory media (Basal.Enriched, selective, enrichment, indicator, transport, and storage) with two examples of each type		
	33	Revision		
12	34	Test	12	1. Sterilization by filtration by membrane method. 2. Handling and care of different types of microscopes.
	35	Different types of inoculating loops		
	36	Different types of swabs and their uses.		

13	37	Types of bacterial culture: broth culture,	13	1. Staining techniques: Gram, Albert's staining, 2. Ziehl Neelson staining, Capsule and
	38	stab culture, slant culture.		
	39	Culture techniques: streak plate, pour plate		
14	40	spreading/ lawn culture	14	Preparation of culture media: 1. Nutrient agar 2. Blood agar
	41	Aerobic and anaerobic culture,		
	42	Isolation of pure cultures and disposal of cultures.		
15	43	Revision of Vth unit	15	Preparation of culture media: 1. Chocolate agar, 2. MacConkey agar
	44	Test		
	45	Revision of complete syllabus		
16	46	Revision	16	1. Viva Voice
	47	Revision		
	45=	Revision		

Lesson Plan

Name of the Faculty : Ms Pratima Saini

Discipline : Medical Lab Technology

Semester : 1st

Subject : Fundamental of MLT

Lesson Plan : 16 weeks (From July 2026 to November 2026)

Work load (lecture/practical) per week (in hours) : Lectures-03, Practical-04

WORK	THEORY		PRACTICAL	
	Lecture Day	Topic (Including assignment/test)	Practical Day	Topic
1	1 st	Basic ethics of Medical laboratory Technology	1 st	The Principal and procedure of autoclave and identify their parts– water bath, hot airoven, incubator
	2 nd	Training of clinical laboratory technicians		
	3 rd	Medical laboratory professional - professionalism in laboratory workers	2 nd	
2	4 th	Code of conduct and communication between physician and lab technician	3 rd	The Principal and procedure of autoclave and identify their parts– water bath, hot airoven, incubator
	5 th	First aid in the clinical laboratory	4 th	
	6 th	Storage and handling of dangerous chemicals		
3	7 th	Common Laboratory hazards	5 th	To demonstrate basic internal organization identifies their parts. Centrifuge colorimeter
	8 th	Color coding of various Waste disposal containers in the labs		
	9 th	Assignment	6 th	
4	10 th	Test	7 th	To demonstrate basic internal

	11 th	Introduction to Basic Equipments in MLT		organization identifies their parts. Centrifuge colorimeter
	12 th	Different types of syringes used for blood collection	8 th	
5	13 th	Basic requirements of blood collection	9 th	To demonstrate basic internal organization of compound microscope identify their parts
	14 th	Revision / Assignment		
	15 th	Test	10 th	
6	16 th	Principle, Care, Procedure and Application of the Basic Instruments Part-I (Centrifuge (routine - low and high speed -table top)	11 th	To demonstrate basic internal organization of compound microscope identify their parts
	17 th	Water Bath		
	18 th	Hot Air Oven	12 th	
7	19 th	Incubator	13 th	To demonstrate basic internal organization of identify their parts pH meter chemical balance
	20 th	Colorimeter		
	21 th	Compound Microscope (Monocular and Binocular)	14 th	
8	22 th	Revision / Assignment	15 th	To demonstrate basic internal organization of identify their parts pH meter chemical balance
	23 th	Test		
	24 th	Principle, Care & Safe Operating Procedure and Application of the Basic Instruments Part-II (pH Meter)	16 th	
9	25 th	Distillation unit	17 th	To demonstrate basic internal organization & identify their parts. Microtome Tissue Processing Unit
	26 th	Balance (Physical and chemical		
	27 th	Microtome	18 th	

				Hematology Cell
10	28 th	Microbe filters (Seitz, Glass Scintered & Membrane)	19 th	Revision
	29 th	Revision		
	30 th	Principle, Care, Procedure and Application of the Advanced Instruments (Refrigerated Centrifuge)	20 th	
11	31 th	Ultra Centrifuge	21 th	Revision
	32 th	Specialised Incubator		
	33 th	B.O.D. Incubator	22 th	
12	34 th	Special Microscopes		Revision
	35 th	Dark Field Microscope	23 th	
	36 th	Phase Contrast Microscope		
13	37 th	Florescence Microscope	Revision	
	38 th	Electron Microscope		24 th
	39 th	Tissue Processing Unit		
14	40 th	Biochemistry Analyzer	26 th	Revision
	41 th	Laminar Air Flow Hood& their Different Types		
	42 th	Haematology Cell Counter	27 th	
15	43 th	Revision	28 th	Viva voce
	44 th	Assignment		
	45 th	Revision	29 th	
16	46 th	Revision	30 th	Viva voce
	47 th	Assignment		
	48 th	Revision	31 th	

Lesson plan

Name of the Faculty : Expert

Discipline : MLT

Semester : 1st

Subject : Introduction to Hematology

Lesson Plan Duration: From July 2026-Nove. 2026

Work load (Lecture / practical) per week (n hours) = Lecture=3, Practical=4

WORK	THEORY		PRACTICAL	
	Lecture Day	Topic (Including assignment/test}	Practical Day	Topic
1 st	1	Introduction to haematology	L1	Parts of microscope (Monocular & Binocular): Its function and care)
	2	Various glassware used in haematology labs		
	3	Various plasticware used in haematology labs		
2 nd	4	Hb tube, Hbpipette, RBC pipette, WBC pipette)	L2	Parts of centrifuge: Its function and care
	5	Definition & Composition Cells- WBC (Granulocytes- Neutrophils, Eosinophils & Basophils)		
	6	(Agranulocytes- Lymphocytes & Monocytes)		
3 rd	7	RBC, Platelets	L3	Parts of Blood Mixer: Its function and care
	8	Plasma & its components		
	9	Function-cell functions & plasma functions		
4 th	10	Class Test	L4	Cleaning and drying of glassware
	11	Formation of blood (Erythropoiesis)		
	12	Assignment		
5 th	13	Formation of blood (Leukopoiesis)	L5	Estimation of Differential Leukocyte count
	14	Formation of blood (Thrombopoiesis)		
	15	Definition and various types of anticoagulants		
6 th	16	Mode of action and preparation of Anticoagulants	L6	Preparation of various anticoagulants
	17	Merits and demerits of anticoagulants		
	18	Define Plasma		
7 th	19	Define Serum	L7	Collection of blood sample by venipuncture
	20	Difference between Plasma and serum		
	21	Revision		
8 th	22	Venipuncture : materials and equipment	L8	

		required for venipuncture		
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	23	Assignment		Collection of blood sample by capillary puncture
	24	Preparation of patients for venipuncture		
9 th	25	Applying tourniquet, Selection and preparing the venipuncture site	L9	Preparation of peripheral blood film (PBF)
	26	Class test		
	27	Collection of blood; by venous method		
10 th	28	Safety measures at the time of sampling and collection	L10	Preparation of stain
	29	Disposal of blood, syringes, needle and lancets		
	30	Various equipment used for collection of blood samples		
11 th	31	Selecting and preparing the puncture site	L11	
	32	Techniques performing the puncture site		
	33	Collection of blood by capillary method		
12 th	34	Assignment	L12	
	35	Care of the capillary puncture site		
	36	Vacutainer system for blood collection		
13 th	37	Introduction to Romanowsky stains	L13	
	38	Class Test		
	39	Theory and preparation of leishman stain		
14 th	40	Theory and preparation of Giemsa stain	L14	
	41	Theory and preparation of Wright stain		
	42	Choice of slide and spreader and preparation of blood film		
15 th	43	Characteristics of good film preparation	L15	
	44	Staining procedure of Romanowsky stains		
	45	Examination of blood smear, Identification of blood cell		
16 th	46	Characteristics of good film preparation	L16	
	47	Staining procedure of Romanowsky stains		

	48	Examination of blood smear, Identification of blood cell	
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Lesson Plan

Name of the Faculty: Ms. Jashanpreet Kaur

Discipline: Applied Science

Branch- MLT, Arch. CSE

Year : 1st Year

Subject : Communication Skill

Lesson Plan: 16 Weeks July 2026-Nov 2026

Workload (lecture/practical) per week (in hours): Lectures-02, practicals-02

<i>Week</i>	<i>Theory</i>		<i>Practical</i>	
	<i>Lecture day</i>	<i>Topic (including assignment/test)</i>	<i>Practical Day (1 lab = 2 hours)</i>	<i>Topic</i>
<i>1st</i>	<i>1st</i>	<i>Techniques of reading: Skimming and Scanning</i>		Reading Reading Practice of lessons in the Lab Activity classes.
	<i>2nd</i>	<i>Extensive and Intensive Reading: Textual Study</i>		Reading Reading Practice of lessons in the Lab Activity classes.
<i>2nd</i>	<i>3rd</i>	<i>Homecoming – R.N. Tagore</i>		Reading Reading Practice of lessons in the Lab Activity classes.
	<i>4th</i>	<i>Life Sketch of Sir Mokshagundam Visvesvarayya</i>		Reading Reading Practice of lessons in the Lab Activity classes.

<i>3rd</i>	<i>5th</i>	<i>Homecoming – R.N. Tagore</i>		Reading Reading Practice of lessons in the Lab Activity classes.
		<i>Life Sketch of Sir Mokshagundam Visvesvarayya</i>		Reading Reading Practice of lessons in the LabActivity classes.

4 th	7 th	<i>Narayan Murthy's speech at LBSNA, Dehradun</i>		Comprehension exercises of unseen passages along with the lessons prescribed.
	8 th	<i>UNIT II Fundamentals of Communication</i>		<i>Comprehension exercises of unseen passages along with the lessons prescribed.</i>
5 th	9 th	<i>Concept and Process of Communication,</i>		Vocabulary enrichment and grammar exercises based on the selected readings.
	10 th	<i>Types of Communication (Verbal Communication)</i>		Vocabulary enrichment and grammar exercises based on the selected readings.
6 th	11 th	<i>Barriers to Communication</i>		Reading aloud Newspaper headlines and important articles.
	12 th	<i>Speaking Skill: Significance and essentials of Spoken Communication</i>		Reading aloud Newspaper headlines and important articles.
7 th	13 th	<i>Listening Skill: Significance and essentials of Listening</i>		Fundamentals of Communication i. Introducing oneself, others and leave-taking (talking about yourself)
	14 th	<i>UNIT III Grammar and Usage</i>		Fundamentals of Communication i. Introducing oneself, others and leave-taking (talking about yourself)
8 th	15 th	<i>UNIT III Grammar and Usage</i>		Just a minute (JAM) sessions: Speaking extempore for one minute

			on given topics	
	16	Nouns		
9th	17th	Laws of photometry,	Viva Voice	Revision and file checking

	18 th	Pronouns		Just a minute (JAM) sessions: Speaking extempore for one minute on given topics
10 th	19 th	Articles		Situational Conversation: Offering- Responding to offers; Congratulating; Apologising and Forgiving; Complaining; Talking about likes and dislikes, Self-introduction Mock Interviews.
	20 th	Verbs(Main and Auxiliary)		
11 th	21 st	Tenses		Grammar and Usage i. Written and Oral Drills will be undertaken in the class to facilitate holistic linguistic competency among learners.
	22 nd	UNIT IV Writing Skills		Grammar and Usage i. Written and Oral Drills will be undertaken in the class to facilitate holistic linguistic competency among learners.
12 th	23 rd	Significance, essentials and effectiveness of		Exercises on the prescribed grammar topics.

		<i>Written Communication</i>		Exercises on the prescribed grammar topics.
	<i>24th</i>	<i>Notice Writing</i>		
<i>13th</i>	<i>25th</i>	<i>Official Letters and E-mails.</i>		Exercises on the prescribed grammar topics.
	<i>26th</i>	<i>Official Letters and E-mails.</i>		

14 th	27 th	Paragraph Writing		Exercises on the prescribed grammar topics.
	28 th	Netiquettes		<i>Writing Skills</i> <i>i. Students should be given Written Practice in groups so as to inculcate team-spirit and collaborative learning</i>
15 th	29 th	Revision		Group exercises on writing paragraphs on given topics.
	30 th	Revision		Group exercises on writing paragraphs on given topics.
16 th	31 st	Revision		Opening an e-mail account, receiving and sending emails
	32 nd	Revision		Opening an e-mail account, receiving and sending emails