JANTA COLLEGE OF PHARMACY,BUTANA(SONEPAT)

LESSON PLAN

Name of the Faculty : Mrs. PARMILA DEVI

Discipline : DMLT

Semester : First

Subject : INTRODUCTION TO HEMATOLOGY -I

Lesson Plan Duration : 16 weeks(from 20 August 2024 to 29 November 2024)(According to Syllabus Scheme)

Work load(Lecture/Practical)per week(in hours) : Lectures-03(hr),Practicals-04(hr)

Week	Theory		Practical	
	Lecture Day	Topic(including assigment/test)	Practical Day	Topic
1st	1st	**Introduction to haematology (1st Unit)**	1st	Parts of microscope (Monocular & Binocular): Its function and care
	2nd	Various glassware/plasticware used in haematology labs		
	3rd	Various glassware/plasticware used in haematology labs		
2nd	1st	Introduction to blood	2nd	Parts of microscope (Monocular & Binocular): Its function and care
	2nd	Definition & Composition		
	3rd	Cells-WBC (Granulocytes-Neutrophils, Eosinophils & Basophils), (Agranulocytes-Lymphocytes & Monocytes)		
3rd	1st	Plasma & its components	3rd	Parts of centrifuge: Its function and care
	2nd	Function-cell functions & plasma functions		
	3rd	Formation of blood (Erythropoiesis, Leukopoiesis & Thrombopoiesis)		
4th	1st	Formation of blood (Erythropoiesis, Leukopoiesis & Thrombopoiesis)	4th	Parts of centrifuge: Its function and care
	2nd	Formation of blood (Erythropoiesis, Leukopoiesis & Thrombopoiesis)		
	3rd	**Anticoagulants, (2nd Unit**		
5th	1st	Definition,various types of anticoagulants	5th	Parts of Blood Mixer: Its function and care
	2nd	Definition,various types of anticoagulants		
	3rd	their mode of action		
6th	1st	Anticoagulants preparation	6th	Parts of Blood Mixer: Its function and care
	2nd	merits and demerits		
	3rd	Difference between Plasma and serum		
7th	1st	**Collection of blood; venous and capillary (3rd Unit)**	7th	Cleaning and drying of glassware
	2nd	Venipuncture : materials and equipment required for venipuncture		
	3rd	Preparation of patients for venipuncture,Applying tourniquet		
8th	1st	Selection and preparing the venipuncture site	8th	Cleaning and drying of glassware
	2nd	Performing venipuncture		
	3rd	Care of venipuncture site		
9th	1st	Disposable of blood, syringes, needle and lancets.	9th	Estimation of Differential Leukocyte count.
	2nd	**Capillary puncture site (4th Unit)**		
	3rd	Materials and equipment required for capillary puncture site		

10th	1st	Selecting and preparing the puncture site	10th	Estimation of Differential Leukocyte count.
	2nd	Techniques performing the puncture site		
	3rd	Collection of blood sample		
11th	1st	Care of the capillary puncture site	11th	Preparation of various anticoagulants.
	2nd	Vacutainer system for blood collection		
	3rd	**Romanowsky stains (Leishman, Giemsa) (5th Unit)**		
12th	1st	Preparation and theory	12th	Collection of blood sample by venipuncture
	2nd	Choice of slide and spreader		
	3rd	Preparation of blood film		
13th	1st	Characteristics of good blood smear	13th	Collection of blood sample by capillary puncture
	2nd	Examination of blood smear		
	3rd	Identification of blood cell		
14th	1st	**Assignment**	14th	Preparation of peripheral blood film (PBF).
	2nd	Assignment		
	3rd	Assignment		
15th	1st	Test	15th	Preparation of stain.
	2nd	Test		
	3rd	Test		
16th	1st	Theory Sessional	16th	Practical Assignment Preparation
	2nd	Theory Sessional		
	3rd	Theory Sessional		

JANTA COLLEGE OF PHARMACY,BUTANA(SONEPAT)

LESSON PLAN

Name of the Faculty : Mr.Amit Kumar

Discipline : DMLT

Semester : First

Subject : Cl.Microbiology - I

Lesson Plan Duration : 16 weeks(from 20 August 2024 to 29 November 2024)(According to Syllabus Scheme)

Work load(Lecture/Practical)per week(in hours) : Lectures-03(hr),Practicals-04(hr)

Week	Theory		Practical	
	Lecture Day	Topic(including assigment/test)	Practical Day	Topic
1st	1st	Definition, history, relationship of microorganisms to man **(1st Unit)**	1st	Demonstration of safety rules in a microbiology laboratory
	2nd	Safety guideline in a microbiology laboratory. Universal precautions		
	3rd	Bio-safety cabinets: principle,		
2nd	1st	types of bio-safety cabinets and their applications	2nd	cleaning agents and techniques of cleaning of glass and plastic ware.
	2nd	Classification of micro-organisms **(2nd Unit)**		
	3rd	Morphology of Bacteria		
3rd	1st	Bacterial cell wall	3rd	Sterilization by autoclave and hot air oven
	2nd	Cell wall structures		
	3rd	Physiology of bacteria		
4th	1st	Bacterial growth and nutrition	4th	Sterilization by autoclave and hot air oven
	2nd	Sterilization,Introduction,types of sterilization **(3rd Unit)**		
	3rd	Sterilization,Introduction,types of sterilization		
5th	1st	operation of autoclave , sterilization control and sterilization indicators	5th	Sterilization by filtration (Seitz)
	2nd	operation of hot air oven , sterilization control and sterilization indicators		
	3rd	Sterilization by radiation		
6th	1st	filtration (membrane)	6th	Handling and use of compound microscope
	2nd	Chemical methods of Sterilization		
	3rd	Antiseptics and disinfectants		
7th	1st	Definition, types, properties and uses of common Antiseptics and disinfectants	7th	Staining techniques: Gram, Albert's, Ziehl – Neelson's
	2nd	Formaldehyde, Ethylene oxide, phenol compounds, Alcohol, hypochlorite		
	3rd	Definition of Phenol coefficient		
8th	1st	determination Phenol coefficient by Rideal Walker method	8th	Staining techniques: Gram, Albert's, Ziehl – Neelson's
	2nd	Handling of a compound microscope **(4th Unit)**		
	3rd	Care and maintenance of different parts of a compound microscope.		
9th	1st	Principle of working of fluorescent microscope	9th	Staining techniques: Gram, Albert's, Ziehl – Neelson's
	2nd	Staining techniques: Method of smear preparation		
	3rd	Differential staining methods: Gram staining		

10th	1st	AFB staining,Albert's staining	10th	Demonstration of motility (Hanging drop method)
	2nd	staining of capsule		
	3rd	Preparation of staining solutions and their storage		
11th	1st	Definition, synthetic and non-synthetic media **(5th Unit)**	11th	Preparation and sterilization of various culture media
	2nd	Types of culture media: liquid, and solid media		
	3rd	routine laboratory media (Basal. Enriched,		
12th	1st	selective, enrichment	12th	Preparation and sterilization of various culture media
	2nd	routine laboratory media (Basal. Enriched, selective, enrichment		
	3rd	indicator, transport, and storage) with two examples of each type		
13th	1st	Different types of inoculating loops	13th	Isolation of organisms in pure culture, study of colony characteristics and demonstration of haemolysis on blood agar.
	2nd	different types of swabs and their uses		
	3rd	Types of bacterial culture		
14th	1st	broth culture, stab culture, slant culture	14th	Isolation of organisms in pure culture, study of colony characteristics and demonstration of haemolysis on blood agar.
	2nd	Culture techniques: streak plate, pour plate		
	3rd	spreading/ lawn culture		
15th	1st	Aerobic and anaerobic culture	15th	Isolation of organisms in pure culture, study of colony characteristics and demonstration of haemolysis on blood agar.
	2nd	Isolation of pure cultures and disposal of cultures		
	3rd	Isolation of pure cultures and disposal of cultures		
16th	1st	Theory Sessional	16th	Isolation of organisms in pure culture, study of colony characteristics and demonstration of haemolysis on blood agar.
	2nd	Assignment/Test		
	3rd	Assignment/Test		

JANTA COLLEGE OF PHARMACY,BUTANA(SONEPAT)

LESSON PLAN

Name of the Faculty : Mrs.Reena

Discipline : DMLT

Semester : First

Subject : Basic Chemistry

Lesson Plan Duration : 16 weeks(from 20 August 2024 to 29 November 2024)(According to Syllabus Scheme)

Work load(Lecture/Practical)per week(in hours) : Lectures-02(hr),Practicals-02(hr)

Week	Theory		Practical	
	Lecture Day	Topic(including assigment/test)	Practical Day	Topic
1st	1st	**Biologically important elements, study of their atomic number, mass number, atomic mass (1st Unit)**	1st	Glassware Identification - different types, cleaning and preparation of cleaning solution.
	2nd	equivalent weight & molecular weight. Importance of Basic chemistry in medical laboratory technology		
	3rd	Importance of Water quality and Glasswares in clinical laboratory: different types of glassware's, use, cleaning,		
2nd	1st	standardization of volumetric glassware & maintenance. Pipettes - various types and different pipetting techniques	2nd	Standardization, rechecking of volumetric glasswares
	2nd	Biochemical importance of distilled water and deionised water in clinical analysis		
	3rd	Solution and colloids – importance of colloids in biological system		
3rd	1st	Surface tension, osmosis and viscosity their importance in biological system	3rd	Determination of pH of different solutions
	2nd	**Definition of organic and inorganic compounds. Importance of organic compounds – in Biological system (2nd Unit)**		
	3rd	Basic chemistry of carbohydrates,their nutritional effect in humans		
4th	1st	Basic chemistry of proteins ,their nutritional effect in humans	4th	Titration of Acid and Base.
	2nd	Basic chemistry of lipids ,their nutritional effect in humans		
	3rd	**Physiological importance of Acid & Bases and role of pH in human system (3rd Unit)**		
5th	1st	Oxidation and Reduction reactions –Definition	5th	Performing confirmatory tests for Carbohydrate –Molisch
	2nd	Preparation of various standard solutions – definition of primary & secondary standards, SI units and their uses.		
	3rd	Preparation of various standard solutions – definition of primary & secondary standards, SI units and their uses.		
6th	1st	**Principles of photometry, Laws of photometry (4th Unit)**	6th	Performing confirmatory tests for Protein- Biuret
	2nd	its importance - quantification of biomolecules in micro concentration		
	3rd	Principles used in determining concentration of molecules with no known weight		
7th	1st	preparation of standard graph	7th	Identification of Parts of Colorimeter
	2nd	**Blood collection for biochemical analysis (5th Unit**		
	3rd	changes occuring in blood after collection		
8th	1st	management of its disposal	8th	Identification of Parts of Spectrophotometer
	2nd	Different types of Hazards- Biological, Chemical, fire, apparatus		
	3rd	Safety measures needed in Basic chemistry and clinical biochemistry laboratory		
9th	1st	Safety measures needed in Basic chemistry and clinical biochemistry laboratory	9th	Preparation of different types of standards solution.
	2nd	**Assuring Good Laboratory Practices (GLP) in Basic chemistry.**		
	3rd	Revision Syllabus		

10th	1st	Revision Syllabus	10th	Determination of Absorption maximum of a coloured solution
	2nd	Test		
	3rd	Test		
11th	1st	Theory Sessional	11th	
	2nd	Theory Sessional		
	3rd			
	1st		12th	
	2nd			
	3rd			
	1st		13th	
	2nd			
	3rd			
	1st		14th	
	2nd			
	3rd			
	1st		15th	
	2nd			
	3rd			
	1st		16th	
	2nd			
	3rd			

JANTA COLLEGE OF PHARMACY,BUTANA(SONEPAT)

LESSON PLAN

Name of the Faculty : Mr. Amit Kumar

Discipline : DMLT

Semester : First

Subject : Anatomy & Physiology -I

Lesson Plan Duration : 16 weeks(from 20 August 2024 to 29 November 2024)(According to Syllabus Scheme)

Work load(Lecture/Practical)per week(in hours) : Lectures-03(hr),Practicals-02(hr)

Week	Theory		Practical	
	Lecture Day	Topic(including assigment/test)	Practical Day	Topic
1st		**General Anatomy (1st Unit)**	1st	Demonstration of different parts of body(Cranial cavity (Brain),Thoracic cavity (Heart and lungs)
	1st	Introduction to Anatomy & Physiology		
	2nd	Levels of organization, parts of human body		
	3rd	Major body divisions and sectional divisions		
2nd	1st	Basic tissues of the body (Gross structure and functions)	2nd	Demonstration of different parts of body(Abdominal cavity),Pelvic cavity
	2nd	Epithelial tissue		
	3rd	Connective tissue		
3rd	1st	Muscular tissue	3rd	Demonstration of basic tissues of the body
	2nd	Nervous tissue		
		Skeletal System (2nd Unit)		
	3rd	Gross structure		
4th	1st	function and classification	4th	Demonstration of basic tissues of the body
	2nd	Bones of appendicular and axial skeleton		
	3rd	Bones of Pectoral girdle and upper limbs		
5th	1st	Bones of Pelvic girdle and lower limbs	5th	Demonstration of various parts of bones
	2nd	Joints & Articulations		
	3rd	Types of joints (Structural and functional classification)		
6th	1st	Bones forming major synovial joints	6th	Demonstration of various parts of bones
	2nd	Shoulder, Elbow, wrist, hip		
	3rd	knee, ankle and intervertebral joints		
7th		**Muscular System (3rd Unit)**	7th	Demonstration of major joints of the body
	1st	Muscular System		
	2nd	Properties of muscular tissue		
	3rd	Classification, structure and functions of muscles		
8th	1st	Skeletal muscle	8th	Demonstration of major joints of the body
	2nd	Smooth muscle		
	3rd	Cardiac muscle		
9th		**Cardiovascular System (4th Unit)**	9th	Demonstration of structural differences between: - Skeletal muscle - Smooth muscle and - Cardiac muscle
	1st	Anatomy of heart: External& Internal features of heart,		
	2nd	Chambers of heart		
	3rd	Blood vessels attached to various chambers of heart		
10th	1st	Coronary vessels & Major arteries andVeins of body	10th	Demonstration of heart
	2nd	Circulation of Blood: Pulmonary, Coronary and Portal circulation		
	3rd	Blood Pressure: Definition of blood pressure, various terms used in Blood pressure		
11th	1st	Factors affecting& controlling Blood pressure	11th	Demonstration of Radial pulse examination
	2nd	Methods and Apparatus for recording blood pressure		
	3rd	Introduction to ECG: Basic principles, normal electrocardiogram& grids of ECG paper		

12th	1st	electrographic leads, cardiac cycle and Junctional tissues	12th	Demonstration of Blood pressure Estimation
	2nd	Patient preparation for ECG recording &care and maintenance of ECG machine		
		Respiratory System (5th Unit)		
	3rd	Respiratory System	13th	Demonstration of ECG recording
13th	1st	Organs of respiration: Upper and lower respiratory tract		
	2nd	Nose and Paranasal sinuses		
	3rd	Nasopharynx and larynx		
14th	1st	Trachea, bronchi and lungs	14th	Demonstration of various parts of respiratory system
	2nd	Functions and mechanism of Respiratory system		
	3rd	Gas exchange in lungs		
15th	1st	Control of respiration	15th	Demonstration of various parts of respiratory system
	2nd	Basal Metabolic Rate (BMR)		
	3rd	Respirometery: Procedure, clinical applications &Importance		
16th	1st	Theory Sessional	16th	Demonstration of various parts of respiratory system
	2nd	assigment/test		
	3rd	assigment/test		

JANTA COLLEGE OF PHARMACY,BUTANA(SONEPAT)

LESSON PLAN

Name of the Faculty : Mrs. Namarta Devi

Discipline : DMLT

Semester : First

Subject : ENGLISH & COMMUNICATION SKILLS – I

Lesson Plan Duration : 16 weeks((from 20 August 2024 to 29 November 2024)(According to Syllabus Scheme)

Work load(Lecture/Practical)per week(in hours) : Lectures-02(hr),Practicals-02(hr)

Week	Theory		Practical	
	Lecture Day	Topic(including assigment/test)	Practical Day	Topic
1st	1st	**Reading (1st Unit)**	1st	Reading Practice of lessons in the Lab Activity classes
	2nd	Techniques of reading: Skimming and Scanningn		
	3rd	Extensive and Intensive Reading: Textual Study		
2nd	1st	Homecoming – R.N. Tagore	2nd	Comprehension exercises of unseen passages along with the lessons prescribed.
	2nd	Life Sketch of Sir MokshagundamVisvesvarayya		
	3rd	Life Sketch of Sir MokshagundamVisvesvarayya		
3rd	1st	Life Sketch of Dr. Abdul Kalam	3rd	Vocabulary enrichment and grammar exercises based on the selected readings
	2nd	Life Sketch of Dr. Abdul Kalam		
	3rd	Narayan Murthy's speech at LBSNA, Dehradun		
4th	1st	Narayan Murthy's speech at LBSNA, Dehradun	4th	Reading aloud Newspaper headlines and important articles.
	2nd	**Fundamentals of Communication (2nd Unit)**		
	3rd	Concept and Process of Communication		
5th	1st	Types of Communication (Verbal Communication)	5th	Introducing oneself, others and leave- taking(talking about yourself)
	2nd	Barriers to Communication		
	3rd	Barriers to Communication		
6th	1st	Speaking Skill: Significance and essentials of Spoken Communication	6th	Just a minute (JAM) sessions: Speaking extempore for one minute on given topics
	2nd	Listening Skill: Significance and essentials of Listening		
	3rd	**Grammar and Usage (3rd Unit)**		
7th	1st	Nouns	7th	Situational Conversation: Offering-Responding to offers; Congratulating; Apologizing and Forgiving; Complaining; Talking about likes and dislikes, Self-introduction Mock Interviews
	2nd	Pronouns		
	3rd	Articles		
8th	1st	Verbs(Main and Auxiliary)	8th	Situational Conversation: Offering-Responding to offers; Congratulating; Apologizing and Forgiving; Complaining; Talking about likes and dislikes, Self-introduction Mock Interviews
	2nd	Verbs(Main and Auxiliary)		
	3rd	Tenses		
9th	1st	Tenses	9th	Written and Oral Drills will be undertaken in the class to facilitate holistic linguistic competency among learners.
	2nd	**Writing Skills (4th Unit)**		
	3rd	Significance, essentials and effectiveness of Written Communication		

10th	1st	Netiquettes	10th	Exercises on the prescribed grammar topics.
	2nd	Official Letters and E-mails		
	3rd	Frequently-used Abbreviations used in Letter-Writing		
11th	1st	Paragraph Writing	11th	Exercises on the prescribed grammar topics.
	2nd	Netiquettes		
	3rd			
12th	1st		12th	Exercises on the prescribed grammar topics.
	2nd			
	3rd			
13th	1st		13th	Exercises on the prescribed grammar topics.
	2nd			
	3rd			
14th	1st		14th	Students should be given Written Practice in groups so as to inculcate team-spirit and collaborative learning
	2nd			
	3rd			
15th	1st		15th	Group exercises on writing paragraphs on given topics
	2nd			
	3rd			
16th	1st		16th	Opening an e-mail account, receiving and sending emails
	2nd			
	3rd			

JANTA COLLEGE OF PHARMACY,BUTANA(SONEPAT)

LESSON PLAN

Name of the Faculty : Mrs. Poonam Rani

Discipline : DMLT

Semester : First

Subject : FUNDAMENTALS OF MLT

Lesson Plan Duration : 16 weeks(from 20 August 2024 to 29 November 2024)(According to Syllabus Scheme)

Work load(Lecture/Practical)per week(in hours) : Lectures-03(hr),Practicals-02(hr)

Week	Theory		Practical	
	Lecture Day	Topic(including assigment/test)	Practical Day	Topic
		Basic Training of laboratory technicians		
1st	1st	Basic ethics of Medical laboratory Technology	1st	The Principal and procedure of autoclave and identify their parts– water bath, hot air oven, incubator
	2nd	Training of clinical laboratory technicians		
	3rd	Medical laboratory professional - professionalism in laboratory workers		
2nd	1st	Code of conduct and communication between physician and lab technician	2nd	The Principal and procedure of autoclave and identify their parts– water bath, hot air oven, incubator
	2nd	First aid in the clinical laboratory		
	3rd	Storage and handling of dangerous chemicals		
3rd	1st	Common Laboratory hazards	3rd	The Principal and procedure of autoclave and identify their parts– water bath, hot air oven, incubator
	2nd	Color coding of various Waste disposal containers in the labs		
		Introduction to Instrumentation in a Medical Laboratory		
	3rd	Introduction to Basic Equipments in MLT		
4th	1st	Different types of syringes used for blood collection.	4th	The Principal and procedure of autoclave and identify their parts– water bath, hot air oven, incubator
	2nd	Basic requirements of blood collection.		
		Principle, Care, Procedure and Application of the Basic Instruments Part-I		
	3rd	Centrifuge (routine - low and high speed -table top)		
5th	1st	Centrifuge (routine - low and high speed -table top)	5th	To demonstrate basic internal organization & identify their parts. Centrifuge colorimeter
	2nd	Water Bath		
	3rd	Hot Air Oven		
6th	1st	Incubator	6th	To demonstrate basic internal organization & identify their parts. Centrifuge colorimeter
	2nd	Colorimeter		
	3rd	Compound Microscope (Monocular and Binocular)		
7th	1st	Compound Microscope (Monocular and Binocular)	7th	To demonstrate basic internal organization of compound microscope & identify their parts.
		Principle, Care & Safe Operating Procedure and Application of the Basic Instruments		
	2nd	pH Meter		
	3rd	Distillation unit		
8th	1st	Balance (Physical and chemical)	8th	To demonstrate basic internal organization of compound microscope & identify their parts.
	2nd	Balance (Physical and chemical)		
	3rd	Micro tome		

9th	1st	Micro tome	9th	To demonstrate basic internal organization of identify their parts. pH meter chemical balance
	2nd	Microbe filters (Seitz, Glass Scintered & Membrane)		
	3rd	Microbe filters (Seitz, Glass Scintered & Membrane)		
10th	1st	Microbe filters (Seitz, Glass Scintered & Membrane)	10th	To demonstrate basic internal organization of identify their parts. pH meter chemical balance
		Principle, Care, Procedure and Application of the AdvancedInstruments		
	2nd	Refrigerated Centrifuge		
	3rd	Ultra Centrifuge		
11th	1st	Specialised Incubator	11th	To demonstrate basic internal organization & identify their parts. Microtome Tissue Processing Unit Hematology Cell Counter
	2nd	B.O.D. Incubator		
	3rd	Special Microscopes		
12th	1st	Dark Field Microscope	12th	To demonstrate basic internal organization & identify their parts. Microtome Tissue Processing Unit Hematology Cell Counter
		Phase Contrast Microscope		
	2nd	Florescence Microscope		
	3rd	Electron Microscope		
13th	1st	Tissue Processing Unit	13th	To demonstrate basic internal organization & identify their parts. Microtome Tissue Processing Unit Hematology Cell Counter
	2nd	Tissue Processing Unit		
	3rd	Biochemistry Analyzer		
14th	1st	Biochemistry Analyzer	14th	To demonstrate basic internal organization & identify their parts. Microtome Tissue Processing Unit Hematology Cell Counter
	2nd	Laminar Air Flow Hood& their Different Types		
	3rd	Laminar Air Flow Hood& their Different Types		
15th	1st	Haematology Cell Counter	15th	Practical Assignments preparation
	2nd	Haematology Cell Counter		
		Test		
	3rd	Test		
16th	1st	Theory Sessional	16th	Practical Assignments preparation
	2nd	Theory Sessional		
	3rd	Practical Assignments		