

# **SYLLABUS**

# **BACHELOR IN ENDOSCOPY TECHNOLOGY**

4 Years (VIII Semesters)

(3 Years+1 Year (VII-VIII Semester) Internship)



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		SEMESTER	<b>-I</b>						
Course Code	Course	Paper Title	Credits	100	ont er w	act eek		Evaluation	
Course Coue	Category	raper Title	Credits	L	Т	P	Intern al	External	Total
	Core	Human Anatomy	4	3	1	-	20	80	100
	Core	Human Physiology	4	3	1		20	80	100
	Core	General Biochemistry	4	3	1	-	20	80	100
	Core	Medical Ethics & Computer Skills related to Perfusion Technology	4	3	1	-	20	80	100
	Practical	Practical for all subjects / Clinical Posting	5	-	-	10	50	150	200
	Skill Enhanceme nt Course	Environmental Science and Health	2	2	(s=0)	-	20	80	100
	*Generic Elective	*Students have to opt any one of the open elective courses offered by Institute/ College/University.	2	2	-	-	20	80	100
	Total Credit-			T	ota	l Cor	ntact Ho	urs- 30	

\*Credits of MOOC, SWAYAM and NEPTEL will be considered similar to the credits of Open Elective /General Elective

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	The state of the s	SEMESTER -II							
Course Code	Course	Paner Title	Credits -		Cont er w	act eek	Evaluation		
Course Code	Category	Paper Title		L	Т	P	Intern al	External	Total
	Core	General Microbiology	4	3	1		20	80	100
	Core	General Pathology	4	3	1	-	20	80	100
	Core	General Pharmacology	4	3	1	-	20	80	100
	Core	Nutrition	4	3	1	-	20	80	100
	Practical	Practical for all subjects / Clinical Posting	5	-	-	10	50	150	200
	Skill Enhancement Course	Medical terminology and Record keeping	2	2			20	80	100
	*Generic Elective	*Students have to opt any one of the open elective courses offered by Institute/ College/University.	2	2			20	80	100
	Total Credit- 25			T	otal	Con	tact Hou	ırs- 30	

\*Credits of MOOC, SWAYAM and NEPTEL will be considered similar to the credits of Open Elective
/General Elective

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		SEMESTER -III							
C C 1	Course	D. T.A.	Credit	Co	onta	ct per ek		Evaluation	n
Course Code	Category	Paper Title	S	L	T	P	Inter nal	Externa 1	Total
	Core	Basics of Endoscopy & Endoscopic Instruments – I	4	3	1	-	20	80	10
	Core	Basics of Endoscopy & Endoscopic Instruments – II	4	3	1		20	80	10
	Core	Interpretation of Endoscopic Results	4	3	1	12	20	80	10
	Core	Infection Control	4	3	1		20	80	10
	Practical	Practical for all subjects / Clinical Posting	5		=	10	50	150	200
	Discipline Specific Elective	General Principles and Practices of Public Health/ Forensic Psychology	2	2	-	-	20	80	10
	Ability Enhanceme nt Course	Computer/BASIC EMERGENCY MANAGEMENT	2	2	-	-	20	80	10
	*Generic Elective	*Students have to opt any one of the open elective courses offered by Institute/ College/University.	2	2	8=:	-	20	80	10
	Total Credi	t- 27		T	ota	Cont	act Hou	ırs- 32	8

\*Credits of MOOC, SWAYAM and NEPTEL will be considered similar to the credits of Open Elective /General Elective

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		SEMESTER –IV							
Course Code	Course	Donou Title	Credits	Contact per week			Evaluation		
Course Code	Category	Paper Title	Cre	L	T	P	Inte rnal	Extern al	Tota 1
	Core	Basic Medicine	4	3	1	(S. <del>)</del>	20	80	100
	Core	Basic Surgery	4	3	1		20	80	100
	Core	Preparations for endoscopic procedures & patient Care	4	3	1	257	20	80	100
	Core	Environmental & Biomedical Waste Management; entrepreneurship and professional management	4	3	1	-	20	80	100
	Practical	Practical for all subjects / Clinical Posting	5	-	-	10	50	150	200
	Discipline Specific Elective	Communication skill for Health care professional/ introduction to national healthcare system	3	3	:-		20	80	100
	Skill Enhancement Course	Medical Law / Ethics in public health	2	2	_	· •	20	80	100
	*Generic Elective	*Students have to opt any one of the open elective courses offered by Institute/ College/University.	2	2	-	85	20	80	100
	Total Credit- 28					l Con	tact H	ours- 33	

\*Credits of MOOC, SWAYAM and NEPTEL will be considered similar to the credits of Open Elective /General Elective

### SEMESTER -V

			Its	Contact per week			Evaluation		
Course Code	Course Category	Paper Title	Credits	L	Т	P	Int ern al	Exter nal	Tot al
	Core	Advance Endoscopic Technology	4	3	1	-	20	80	100
	Core	Diagnostic & Therapeutic Endoscopy	4	3	1	-	20	80	100
	Core	Diagnostic & Therapeutic ERCP	4	3	1	<u>=</u>	20	80	100

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Core	Immunology	4	3	1	-	20	80	100
Practical	Practical for all subjects / Clinical Posting	5	-	-	10	50	150	200
Discipline Specific Elective	Medical psychology/ Biostatics and Research methodology	3	-	-	3	20	80	100
Ability Enhancement	Entrepreneurship development/ Introduction to quality and patient safety	2	-	-	2	20	80	100
*Generic Elective	*Students have to opt any one of the open elective courses offered by Institute/ College/University.	2	2	-	2	20	80	100
Total Credit	- 27		T	otal	Cont	act Ho	ours- 32	2

\*Credits of MOOC, SWAYAM and NEPTEL will be considered similar to the credits of Open **Elective / General Elective** 

			<u></u>	Con	tact pe	r week		Evaluation	n
Course Code	Course Category	Paper Title	Credi ts	L	Т	P	Inte rnal	Extern al	Tota 1
	Core	Biostatistics & Lab Management	4	3	1	=	20	80	100
	Core	Endoscopy OT Administration; design & Documentation	4	3	1	2	20	80	100
	Core	Medico Legal & Record Keeping	4	3	1	<u> </u>	20	80	100
	Core	Professionalism and values	4	3	1	8 <u>2</u> 1	20	80	100
	Practical	Practical for all subjects / Clinical Posting	5	-	-	10	50	150	200
	Discipline Specific Elective	HOSPITAL MANAGEMENT/ Basics of clinical Skill Learning	3	3	-		20	80	100
	Skill Enhanceme nt Course	BASIC AND ADVANCE LIFE SUPPORT/ ORGANIZATIONAL BEHAVIOUR	2	2			20	80	100
	*Generic Elective	*Students have to opt any one of the open elective courses offered by Institute/ College/University.	2	2			20	80	100
	Total Cred		Total	Conta	act Hou	ırs- 32			

\*Credits of MOOC, SWAYAM and NEPTEL will be considered similar to the credits of Open Elective /General Elective

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	SEME	STER – VII&	VIII INTERNSHIP							
Subject Code	Course	Course title		uation						
Subject Code	category	Course title	Internal	External						
	Core	Internship	20	80						
	Core	Internship	20	80						
		Internship is f	or 12 months,							
0.00 A E 100 0 S 100 A 1	Tr.									
SEMESTER			CREDIT							
I			25							
II			25							
III			27							
IV	0		28							
V			28							
VI			28							
VII		20								
VIII		20								
TOTALCREDITS	£		201							

Exit: Honors'Endoscopy Technology

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### SEMESTER –I HUMAN ANATOMY

Course	Course	Paper Title	Credits	Contact per week			Evaluation			
Code	Category			L	Т	P	Internal	External	Total	
	Core	Human Anatomy	4	3	1	2	20	80	100	

### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describe the anatomy & terminology of cell, tissues of body Skin & its	Remember
Blood supply.	
Explain the blood circulation system & skeleton system with	Understand
Classification of bones, Parts of developing long bone.	
Determine the muscular system, Muscles of Upper limb, Muscles of lower	Apply
limb, Muscles of Neck, Muscles of back & joints.	SET USES AND
Analyze the respiratory system with Bronchopulmonary segments &	Analyze
circulatory system: Types of blood vessels, Heart& Pericardium.	
Assess the digestive system, role of digestive juices & enzymes & reproductive system: spermatogenesis & oogenesis.	Evaluate
Formulate the excretory system Pathway of glomerulusfiltration rate with structure & structure of nephrons.	Create

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

Learning Outcomes	<ol> <li>To introduce the students to the concepts related to General anatomy,</li> </ol>
	Muscular, Respiratory, Circulatory, Digestive and Excretory system
	2. Demonstrate and understand the basic anatomy of Respiratory and
	Circulatory system.
	3. Demonstrate and understand the basic anatomy of Digestive and
	Excretory system.
	4. Knowledge of basic concepts of human body anatomical structure.
	5. Knowledge of interrelationships, gross, functional and applied anatomy of various structures in the human body.

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### UNIT-I

Introduction to Anatomy Anatomical terms, planes, organization of human body- cell, tissue, organ & organ system.

Musculo-skeletal system: Types of bones, structure & divisions of the skeleton system, name of all the bones and their parts, joints- classification. Structure and types of muscles

Anatomy of the Nervous system

Central nervous system & Peripheral nervous system- different components

### **UNIT-II**

Anatomy of Circulatory system:

General plan of circulatory system and its components-

Heart- size, location, coverings, chambers, blood supply, nerve supply, the blood vessels

General plan of circulation, pulmonary circulation

Name of arteries and veins and their positions Lymphatic system - general plan Anatomy of the Respiratory system:

Organs of Respiratory System (Brief knowledge of parts and position)

#### UNIT-III

Anatomy of the Digestive system: Anatomy of alimentary tract; Parts of the tract

Accessory glands of digestion; Pancreas, Liver, Gall Bladder

Anatomy of Excretory system Kidneys- location, gross structure, excretory ducts, ureters, urinary bladder, urethra

### **UNIT-IV**

Reproductive system

Male Reproductive System

Female Reproductive System Anatomy of the endocrine system

### **UNIT-V**

Name of all endocrine glands their positions

Hormones and their functions- Pituitary, Pituitary, Thyroid, Parathyroid, Adrenal glands, Gonads & Islets of pancreas

### PRACTICALS

- 1. Demonstration of parts of microscope and its uses
- 2. Demonstration of skeleton and joints.
- 3. Demonstration of deltoid and gluteus maximus, Cubital fossa.
- 4. Clinical Examination of Arterial Pulse
- 5. Demonstration of body temperature.

### **Reference Books:**

- a. Human Anatomy Regional and Applied Vol. 1, Vol.2 & Vol.3, B.D.ChourasiaC.B.S. Publishers, New Delhi- 9<sup>th</sup> edition -2022
- 2. Hand Book of General Anatomy B.D. Chaurasia, C.B.S. Publishers, New Delhi-9<sup>th</sup> edition -2022
- 3. Text Book of Human Histology Inderbir Singh, Jaypee Brothers, Medical
- 4. Publishers, Delhi -7<sup>th</sup> edition 2021
- 5. Gray's Anatomy Susan Standing, Elsevier Churchill Livingstone, Edinburg 42<sup>nd</sup> edition- 2021

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### **HUMAN PHYSIOLOGY**

Course	Course	Paper Title	Credits	Contact per week			Evaluation			
Code	Category		Cicuits	L	T	P	Internal	External	Total	
	Core	Human Physiology	4	3	1	-	20	80	100	

### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describe the basic physiology of hematology, Homeostasis, Hemopoiesis, Hemogram, Anemia, Body Fluid, Immunity.	Remember
Explain the basic physiological concept of cardiovascular system, functions, properties of cardiac muscle, Origin of Cardiac Impulse.	Understand
Determine the nerve – muscle physiology, neuromuscular junction & Mechanism of muscle contraction & central nervous system.	Apply
Analyze the Physiologic anatomy, functions of respiratory system, Mechanism of respiration & circulatory system.	Analyze
Assess the physiology of digestive system Composition and functions of all Digestive juices, Movements.	Evaluate
Formulate the physiological concept of excretory system, structure & function of excretory organs.	Create

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

Learning outcomes

- 1. To understand the basic physiological concepts of General physiology
- 2. To understand the basic physiological concepts of Hematology
- 3. To understand the basic physiological concepts of Nerve-Muscle physiology.
- 4. To understand the basic physiological concepts of Respiratory physiology.
- **5.** To understand the basic physiological concepts of Cardiovascular physiology

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### **UNIT-I**

General Physiology

Cell, Transport across cell membrane, homeostasis, resting membrane potential, action potential Blood

Composition and functions of Blood RBC, WBC, Platelet count, Hemoglobin Blood Groups - ABO and RH grouping Hemostasis & Anticoagulants

### **UNIT-II**

Cardiovascular system Cardiac muscle, Pacemaker & conducting tissue Cardiac Cycle Cardiac output, Heart rate, ECG Arterial blood pressure Respiratory System Functions of Respiratory system Mechanism of respiration, lung volumes & capacities

#### **UNIT-III**

Nerve & Muscle physiology Neuron structure & properties Neuromuscular junction Skeletal muscle structure mechanism of contraction Cerebrospinal Fluid (CSF): Composition, functions & Circulation. Central & autonomic Nervous system Organization of CNS Functions of various parts of Brain, in brief Composition, functions and circulation of CSF Differences between sympathetic and parasympathetic division

### **UNIT-IV**

Digestive system Functional Anatomy, organization & innervations Composition and functions of all Digestive juices Digestion & Absorption of carbohydrates, proteins and fats

### **UNIT-V**

**Excretory System** 

Kidneys: Functions, Nephron, Juxta-glomerular Apparatus

Renal circulation

Mechanism of Urine formation

**GFR** 

Endocrine and Reproductive systems Endocrine glands & hormones secreted

Functions of Reproductive system

Male Reproductive System: spermatogenesis, Testosterone.

Female reproductive system: Ovulation, Menstrual cycle.

Pregnancy test

### **PRACTICALS**

- 1. Estimation of Hemoglobin Concentration
- 2.Determination of Bleeding Time and Clotting Time
- 3.Determination of Blood Groups
- 4.Recording of normal Blood Pressure
- 5.Determination of Vital Capacity

### **Reference Books:**

- 1. A.K. Jain, Textbook of Physiology (Volume I & II) -9<sup>th</sup> edition -2021.
- 2. Dr. Venkatesh. D and Dr. Sudhakar H.S. Basic of Medical Physiology- Wolter-Kluwer Publication -  $4^{\rm th}$  edition - 2018
- 3. Chaudhari (Sujith K) Concise Medical Physiology New Central Book- 7<sup>th</sup> edition 2016

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### GENERAL BIOCHEMISTRY

Course	Course	Paper Title	Credits	Contact per week			Evaluation		
Code	Category	raper ritte	Credits	L	Т	P	Internal	External	Total
	Core	General Biochemistry	4	3	1		20	80	100

### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describe the biomolecules Introduction and scope of biochemistry, Chemistry of carbohydrates, proteins, lipids.	Remember
Explain the metabolism of glucose, fats & amino acids & their regulatory pathways.	Understand
Determine the structure & function of enzymes & its clinical importance	Apply
Analyze the RDA, Sources of Vitamins and Minerals, functions and deficiency of Fat-soluble vitamins.	Analyze
Assess the balanced diet, Satiety value, Energy imbalance- obesity, starvation, Limitations of the daily food guide.	Evaluate
Formulate the conventional & specialized lab investigation, Principle and applications of Colorimeters, pH Meter.	Create

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

### Learning outcome

- 1. To identify the five classes of polymeric biomolecules and their monomeric building blocks.
- 2. Explain the specificity of enzymes (biochemical catalysts), and the chemistry involved in enzyme action.
- 3. Explain how the metabolism of glucose leads ultimately to the generation of large quantities of ATP.
- 4. Describe how fats and amino acids are metabolized, and explain how they can be used for fuel.

### UNIT-I

Cell: Morphology, structure & functions of cell, cell membrane, Nucleus, chromatin, Mitochondria, Endoplasmic Reticulum, Ribosomes.

Carbohydrates: Definition, chemical structure, functions, sources, classifications, Monosaccharides, Disaccharides, Polysaccharides, mucopoloysaccharide and its importance, glycoproteins

#### UNIT-II

Lipids: Definition, function, sources, classification, simple lipid, compound lipid, derived lipid, unsaturated and saturated fatty acid. Essential fatty acids and their importance, Blood lipids and their implications, cholesterol with its importance.

Proteins: Definition, sources, amino acids, structure of protein, their classification, simple protein, conjugated protein, derived proteins and their properties.

### **UNIT-III**

Enzymes: Definitions, mechanism of action, factors affecting enzyme action, enzyme of clinical importance.

Nutrition 1) Vitamins: Types, functions and role. 2) Principal minerals and their functions (Ca, P, Mg, Na, K, Cl) 3) Balanced diet, Diet for Chronically and terminally ill patients, post-operative patients

#### **UNIT-IV**

Carbohydrate Metabolism: Glycolysis, TCA cycle, Glycogen metabolism, Gluconeogenesis, Maintenance of Blood Glucose. Diabetes Mellitus and its complications. Lipid Metabolism: Beta oxidation, Ketone bodies, Cholesterol and atherosclerosis, obesity. Nucleic acid metabolism.

### **UNIT-V**

Protein Metabolism: Transamination, Deamination, Fate of ammonia, urea synthesis and its inborn errors. Water and Electrolyte, Fluid compartment, daily intake and output sodium and potassium balance

### PRACTICALS

- 1. Introduction of Laboratory apparatus
- 2.Instruments (Theory & demonstration)
- 3. Urine Analysis
- 4. Analysis of blood sugar c.
- 5. RFTs (Estimation of blood urea, serum creatinine, creatinine clearance, and their implications)

### Reference Books:

- 1: Essentials of Biochemistry U.Satyanarayan, U.Chakrapani 4<sup>th</sup> edition-2021
- 2: A textbook of Biochemistry Dr SK Gupta 2<sup>nd</sup>edition. -2019
- 3: Concise textbook of Biochemistry for paramedical students DM Vasudevan, Sukhas Mukherjee  $2^{nd}$ edition. -2021
- 4: Essentials of Biochemistry Pankaj Naik -6<sup>th</sup>edition. -2022

Medical Ethics & Computer Skills related to Endoscopy Technology

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Course Code	Course	Paper Title	Credits	Contact per week			Evaluation			
Course Code	Category		Cicuis	L	Т	P	Internal	External	Total	
	Core	Medical Ethics & Computer Skills related to Endoscopy Technology	4	3	1	141	20	80	100	

### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Legal and ethical challenges in healthcare.	Remember
Students explore the legal, ethical and moral issues in healthcare professionals. Identify issues related to potential legal liability in the workplace.	Understand
To introduce students to the discipline of public health	Apply
To give an overview of the methods of prevention and health promotion	Analyze
To understand the determinants and measures of disease and health related states	Evaluate
To understand the status of health and disease at global and national levels	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

# Learning Outcome

- 1. To develop ability to design and implement strategies to enhance public health and strengthen the health systems
- 2. To develop the critical ability to analyze and understand the impact of public health policies on health status and indicatorsMedical ethics is a practical application of moral standards that are meant to benefit the patient.
- 3. Able to understand complex healthcare public policy from all sides of an issue, regardless of your personal beliefs.

UNIT-I

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Medical ethics - Definition - Goal - Scope, Introduction to Code of conduct, Basic principles of medical ethics - Confidentiality, Autonomy and informed consent - Right of patients

### **UNIT-II**

Malpractice and negligence - Rational and irrational drug therapy, Care of the terminally ill- Euthanasia, Organ transplantation

### UNIT-III

Medico legal aspects of medical records – Medico legal case and type- Records and document related to MLC - ownership of medical records - Confidentiality Privilege communication - Release of medical information - Unauthorized disclosure - retention of medical records - other various aspects, Professional Indemnity insurance policy, Development of standardized protocol to avoid near miss or sentinel events

### UNIT- IV

Obtaining an informed consent, Ethics in the profession of endoscopy.

### **UNIT-V**

Concept of computers, Hardware and Software, Introduction to DOS, MSWord/Excel/Power point, Multimedia, Use of internet and E-mail, Hospital Management system.

### **Reference Books:**

- 1.Medical Ethics CM Francis 4<sup>th</sup> edition 2020
- 2. Medical Ethics challenges and prospects in India Subrata Sharma 2012
- 3. Medical Ethics a very short introduction Michael Dunn & Tony Hope- 2<sup>nd</sup> edition 2018
- 4.Textbook of medical bioethics attitude and communication for medical students Motilal C Tayade 2020

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### **ENVIRONMENTAL SCIENCE & HEALTH**

Course Code	Course	Panar Titla	Credi	Contact per week			t Evaluation		
Course Code	Category	Paper Title	ts	L	Т	P	Internal	External	Total
	Ability	ENVIRONMENTAL							
	Enhancement	SCIENCE &	2	2	-	=1	20	80	100
	Course	HEALTH							

### **Course Outcomes:**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describes the components of Environment, basic concepts of Ecosystem & interaction of man & environment.	Receive
Discuss the Global environment problems, bio-diversity loss,	Respond
deforestation & desertification.	
Demonstrate the environmental pollution with impact & control strategies of pollution in urban, rural & industrial areas.	Value
Define the environmental management, concept of health sanitation, environmental disease.	Organize
Revise the Environmental Protection Act, Environmental laws, National movements, environmental ethics.	Characterize
Follow the IUCN - role in environmental protection, aims & objectives of	Receive
human right policies.	

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

- 1. Current environmental issues and highlights the importance of adopting an interdisciplinary approach.
- 2. Sample an ecosystem to determine population density and distribution.
- 3. Create food webs and analyze possible disruption of feeding relationship

**UNIT-I** 

**Components of Environment** – Hydrosphere, lithosphere, atmosphere and biosphere – definitions with examples; Interaction of man and environment;

Ecosystem: Basic concepts, components of ecosystem, Tropic levels, food chains and food webs, Ecological pyramids, ecosystem functions, Energy flow in ecological systems, Characteristics of terrestrial fresh water and marine ecosystems.

#### UNIT-II

National Health Program\_Background objectives, action plan, targets, operations, achievements and constraints in various National Health Program.

#### UNIT-III

**Introduction toAYUSHsystemofmedicine-**IntroductiontoAyurveda;Yogaand Naturopathy,Unani,Siddha,Homeopathy,Needforintegrationofvarioussystemofmedicine.

#### UNIT-IV

Environmental Management – Concept of health and sanitation, environmental diseases – infectious (water and air borne) and pollution related, spread and control of these diseases, health hazards due to pesticide and metal pollution, waste treatment, solid waste management, environmental standards and quality monitoring.

#### UNIT-V

Environmental Protection Act – Environmental Laws, national movements, environmental ethics – holistic approach of environmental protection and conservation, IUCN – role in environmental protection. Concept with reference to UN – declaration, aim and objectives of human right policies with reference to India, recent north-south debate on the priorities of implementation, Environmental Protection Agency Bioremediation – Oil spills, Wastewater treatment, chemical degradation, heavy Metals.

#### Reference books:

- 1. National Health Program & Policies 2020-2021 Samta Soni- 2nd edition.
- 2. Practical & Viva Community Medicine J Kishore, Sneha Kumari- 5<sup>th</sup>edition. -2021
- 3.Textbook of Environmental Science Dr Aruna Kumari Nakkella 2022
- 4. Environmental Studies Purnima Das 2023

SEMESTER-II

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### GENERAL MICROBIOLOGY

Course Code	Course	Paper Title	Credits	Contact per week			Evaluation		
Course Code	Category	Taper Title	Credits	L	Т	P	Internal	External	Total
	Core	General Microbiology	4	3	1	1	20	80	100

### Course Outcomes

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describes the Classification of micro-organisms, size, shape and structure of bacteria & Use of microscope in the study of bacteria.	Remember
Explain the classification & different methods with advantages and disadvantages of the various methods infection control measures.	Understand
Determine the immunology & perform serological tests or microbiological laboratory procedures.	Apply
Analyze the etiological agents of global infectious diseases, causative agents, transmission methods, investigation, prevention & control.	Analyze
Assess the clinical relevance of bacteriology, parasitology mycology & virology.	Evaluate
Formulate the causative agents & guidelines to stop the spread of infection in healthcare system.	Create

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

Learning Outcome Upon completion, students should be able to demonstrate:

- 1. Knowledge of microorganisms and the disease process as well as aseptic and sterile techniques.
- 2. Perform microbiological laboratory procedures according to appropriate safety standards

### **UNIT-I**

Microorganisms

(a) Classification-Prokaryotes, Eukaryotes, Viruses, Fungi

(b) Morphology-size, shape, arrangement

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- (c) Special characteristics-spores, capsules, enzymes, mortality, reproduction
- (d) Gram staining, ZN staining
- (e) Different types of microscopes.

### **UNIT-II**

#### Sterilization

- (a) Definition.
- (b) Different methods of sterilization including Gaseous sterilization Plasma sterilization
- (c) Advantage and disadvantage of various methods and their controls
- (d) Sterilization of different instruments used in patients
- (e) Preparation of materials for Autoclaving: packing, loading, holding time, unloading Disinfection
- (a) Definition
- (b) Different type of methods including High level disinfectants
- (c) Disinfection of patient care unit and rooms (O.T., Wards, ICUs & Laboratories)
- (d) Central supply department Areas and floor plan for instrument cleaning high level disinfection & sterilizing area

### **UNIT-III**

### Asepsis

- (a) Universal Precautions
- (b) Use of aseptic precautions to prevent infection,
- (c) Safety mechanisms including vaccination in prevention of blood borne infections Hospital acquired infections

#### **UNIT-IV**

Virology with special reference to hepatitis, poliomyelitis, HIV & Influenza UNIT-V

### Immunity - Non specific

- Natural & Acquired
- Allergy and Anaphylaxis

### PRACTICALS:

- 1. Compound microscope and its application in microbiology.
- 2. Demonstration of sterilization equipment: hot air oven, autoclave.
- 3. Demonstration of commonly used culture media, nutrient broth, nutrient agar, blood agar, chocolate agar, Mac conkey medium, L J media.
- 4. Grams staining.
- 5. Acid fast staining

### Reference books:

- 1: Complete Microbiology 7<sup>th</sup>edition -2022
- 2: Text & Practical Microbiology CP Byeja & V Bayeja 3<sup>rd</sup> edition 2022
- 3: Essentials of Medical Microbiology- Apurba S Sastry & Sandhya Bhat 3<sup>rd</sup> edition-2021
- 4: Textbook of Microbiology 12<sup>th</sup> edition- 2022

GENERAL PATHOLOGY

Course Code	Course	Papar Titla	Paper Title Credits			ct	Evaluation			
Course Code	Category	Taper Title	Credits	L	Т	P	Internal	External	Total	
	Core	General Pathology	4	3	1	-	20	80	100	

### **Course Outcomes**

After completing this course, the student will be able to:

CO Number	CO Statement	Taxonomy			
	Describes basis of systemic pathology & morphology of common disorders.	Remember			
	Explain the general principles of hematology & histopathology techniques.	Understand			
	Determine the general principle of cytopathology techniques & universal safety precaution.				
	Analyze the general principles of clinical pathology techniques, autopsy & museum.	Analyze			
	Assess the clinical information of accurate pathology diagnosis.	Evaluate			
	Formulate the pathological laboratory procedures according needed for final pathologic report.	Create			

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

### Learning Outcomes

- 1. The student should submit the appropriate tissue sections per protocol to demonstrate the lesion and other clinically-relevant information needed for the final pathologic report.
- 2. To aid hematology in the reference ranges for hemoglobin, hematocrit, erythrocytes, and leukocytes in infants, children and adult.

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### UNIT: I

Cell injury, cellular adaptation and cell death

- Causes of cell injury
- Reversible and Irreversible cell injury (Necrosis and its types with examples & morphology)
- -Apoptosis
- -Calcification
- -Hyperplasia, Hypertrophy, Atrophy Metaplasia (Definition with examples).

### UNIT-II

Inflammation and Repair

- -Definition and type of inflammation
- -Granulomatous inflammation with examples
- -Chemical mediators of inflammation.
- -Wound healing by 1st & 2nd intention.

### UNIT-III

Fluid and Hemodynamic disturbances

- -Edema (Pathogenesis)
- -Shock (Definition, Types)
- -Thrombosis (Definition & Pathogenesis)
- -Embolism (Definition & Pathogenesis)
- -Infarction (Definition & Pathogenesis)

#### UNIT-IV

Neoplasia

- -Definition and types of Neoplasia (Benign & Malignant neoplasms)
- -Characterization of Neoplasia.
- -Pathogenesis of Neoplasia.
- -Routes of spread

#### **UNIT-V**

Blood, Blood groups-ABO system, Rh system, Blood transfusion- Indication, transfusion reactions.

- Anemias-classification, morphological and Etiological, effects of anemia on body.

### PRACTICALS

- 1. Collection of blood Samples
- 2. Various instruments used in Hematology
- 3. Hb estimation.
- 4. Blood grouping
- 5. Urine complete examination

### Reference Books:

- 1: Review of Pathology Sparsh Gupta 12<sup>th</sup> edition 2020
- 2: Textbook of Haematology Dr Tejinder Singh -2017
- 3: Essentials in Hematology & Clincal Pathology 2<sup>nd</sup> edition 2017
- 4: A textbook of Pathology–Harsh Mohan–8th edition. -2019

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### PHARMACOLOGY

Course Code	Course	Paper Title	Credits	Contact per week			Evaluation		
Course Code	Category	raper Title	Credits	L	Т	P	Internal	External	Total
	Core	General Pharmacology	4	3	1	-	20	80	100

### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describe the mechanism of anti-anginal drugs, hypertension, arrhythmias & partial or complete heart failure.	Remember
Explain the pharmacotherapy of insomnia & importance of new generation anti-histaminic drugs over old generation antihistamines.	Understand
Determine the corticosteroids & drugs which inhibit acid formation to prevent acidity and stomach/peptic ulcer.	Apply
Analyze the anti-thrombotic agents, lipid lowering agents & anti- atherosclerotic agents.	Analyze
Assess the antibacterial drugs & Narcotics with indications & contraindication in day to day life	Evaluate
Formulate the types of anesthesia and mechanism of action of local & general anesthetic drugs.	Create

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

Learning Outcomes

- 1. Students will be proficient in Pharmacology with proficient knowledge about the different drugs / medicines to be given in various cardiovascular diseases, dose calculation and mode of administration.
- 2. Also recent advances in pharmacology will play a key role in research aspect of the students

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### UNIT- I

### General Pharmacology

- a) Absorption, distribution, metabolism and elimination of drugs,
- b) Routes of drug administration.
- c) Adverse reactions to drugs.
- d) Factors modifying drug response

### UNIT- II

### Autonomic nervous system & Peripheral nervous system

- b) Sympathetic nervous system sympathomimetics, sympatholytic
- c) Parasympathetic Cholinergic, Anticholinergics Drugs
- d) Skeletal muscle relaxants
- e) Local anesthetics

#### UNIT-III

### Central nervous system

- b) Drug therapy of various CNS disorders like epilepsy, depression.
- c) Non-steroidalanti-inflammatory drugs
- d) General anesthetics

### AUTOCOIDS

a) Histamine and antihistaminic

### UNIT-IV

- (E) Cardiovascular system
- a) Drug therapy of hypertension, shock, angina, cardiac arrhythmias
- c) Diuretics
- d) Coagulants and anticoagulants, antiplatelet drugs
- e) Hypo-lipidemic
- (F) Gastrointestinal and respiratory system
- c) Drug treatment of peptic ulcer
- d) Drug therapy of bronchial asthma

#### UNIT- V

- (G) Hormones
- a) Drug therapy of Diabetes
- d) Corticosteroids
- b) Chemotherapeutic agents b- Lactam Antibiotics, fluoroquinolones, aminoglycoside, tetracyclines, chloramphenicol

### PRACTICALS

- 1. Study of laboratory animals and their handling (a. Frogs, b. Mice, c. Rats, d. Guinea pigs, e. Rabbits).
- 2. Study of laboratory appliances used in experimental pharmacology.
- 3. Study of use of anesthetics in laboratory animals.
- 4. Effects of skeletal muscle relaxants using rota-rod apparatus.
- 5. Effect of drugs on locomotor activity using actophotometer.
- 6. Anticonvulsant effect of drugs by MES and PTZ method.
- 7. Study of local anesthetics by different method

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### Reference Books:

- 1: Padmaja Udaykumar Pharmacology for Dental & Allied Health Sciences 4<sup>th</sup> edition, 2017.
- 2: Joginder Singh Pathania, Rupendra Kumar Bharti, Vikas Sood-Textbook of Pharmacology for Paramedical Students 2019
- 3: KD Tripathi- Essentials of Pharmacology 8<sup>th</sup> edition, 2018.
- 4: HL Sharma & KK Sharma Principles of Pharmacology 3<sup>rd</sup> edition, 2017.

### Nutrition

Course Code	Course	Paper Title	Credits	Contact per week			Evaluation		
	Category		Credits	L	T	P	Internal	External	Total
	Core	Nutrition	4	3	(=)	2	20	80	100

### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Distribution of Protein, carbohydrate, fats of a balanced diet	Remember
All the systems of the body	Understand
Understanding of nutrients value for a healthy lifestyle	Apply
Nutrients value of the diet	Analyze
Symptoms of good health	Evaluate
Diet chart: basic understanding	Create

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

**Learning Outcomes** 

- Students will be proficient in nutrient value with proficient knowledge about the different food products to be given in various diseased and healthy individuals.
- 2. Also, recent advances in diet will play a key role in research aspect of the students

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### UNIT- I

Introductiontonutrition-Food as source of nutrients, functions of food, definition of nutrition, nutrients & energy, adequate, optimum & goodnutrition, malnutrition.

Nutrition-Fitness, Athletics & Sports.

Foodguide-Basicfivefoodgroups

Howtousefoodguide(accordingto R.D.A.)

Interrelationship between nutrition & health:

Visiblesymptoms of goodshealth

Useoffood inbody-Digestion, Absorption, transport &utilization.

Roleoffibersin humannutrition.

### UNIT-III

Carbohydrates: Functions, classification, foodsources, storage in body.

Fats &oils: composition, saturated and unsaturated fatty acids, classification,

foodsources, function offats.

Proteins - composition, sources, essential & non-essential amino acids,

functions, Proteindeficiency.

Water - as a nutrient, function, sources, requirement, water balance & effect ofdeficiency.

### UNIT- IV

Minerals - macro & micronutrients. - functions, sources. Bioavailability anddeficiencyofCalcium,Iron,Iodine,Sodium&Potassium(inverybrief)

Vitamins(water &fatsoluble)-definition, classification &functions.

Effectofcooking &heatprocessingonthenutritivevalueof foods.

Processedsupplementaryfoods.

Foodsanitationinhygiene.

### Reference Books:

- 1. U. Satyanarayana- text book of biochemistry by U.Satyanarayana-6<sup>th</sup> edition 2021
- 2. DM-Vasudevan- text book of biochemistry by DM-Vasudevan-  $10^{\mathrm{th}}$  edition 2022

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### SKILL ENHANCEMENT COURSE

### MEDICAL TERMINOLOGY AND RECORD KEEPING

Course Code	Course	Paper Title (	Credits	Contact per week			Evaluation			
Course Code	Category	raper Title	Т					External	Total	
	Skill Enhanceme nt Course	MEDICAL TERMINOLOGY AND RECORD KEEPING	2	2	**	-	20	80	100	

### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describes the basic importance of medical terms into their component parts.	Remember
Analyze and spell words correctly.	Understand
Identify combining forms, prefixes, suffixes and terminology associated with each of thebody systems.	Apply
Understand the importance and types of medical records along with its management	Analyze
Revise to compose records in hospitals	Evaluate
Follow the values and skills required in medical audit	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

### Learning Outcomes:

After completion of the course, students would be able to:

- 1. Ensuring successful learning of basic and advance medical terminology
- 2. Student will able to read, write, spell and understand the medical terminology
- 3. Understand the types, importance and role of medical records and its management techniques.

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#### UNIT-I

Commonly Used Prefixes, Suffixes and root words in Medical Terminology, Common Latin Terms used in Prescription Writing, Study of Standard Abbreviations.

### UNIT-II

Medical Records Management: Meaning, functions, principles of record keeping, Importance of medical records to patients, doctors, and hospitals, classification of records like coding system, indexing system, types of forms basic and special, legal aspects of medical records.

### UNIT-III

International Classification of Diseases (ICD), Electronic Medical Record (EMR), Records Management: Registers, forms, retention and preservation of MR, Role of MRD personnel.

#### UNIT-IV

Medical Registers: Meaning, types, advantages of Medical Registers, registers used in various departments, Statutory registers and reports to be maintained-specimens.

### **UNIT-V**

Medical Audit: its process, role and importance in hospitals.

### **Reference Books:**

- Davies, Juanita. Essentials of Medical Terminology. 3rd edition. New York. Delmar. 2008.
- Mogli. J.D. Medical Records: Organization & Management 2ndedition New Delhi: Jaypee Brothers.
- The body by Bilbirson Agreed for Occupancy

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### SEMESTER-III

### Basics of Endoscopy & Endoscopic Instruments - I

Course Code	Course Paper Title		Credits	Contact per week			Evaluation			
Course Code	Category	Taper Title	Credits	L	Т	P	Internal	External	Total	
	Core	Basics of Endoscopy & Endoscopic Instruments – I	4	3	1	-	20	80	100	

After completing this course, the student will be able to:

CO Statement	Taxonomy
Basics of instruments used for endoscopy	Remember
The basics principle of endoscopy on the grounds of patient requirements	Understand
The endoscopy techniques to access clinicians	Apply
The need of endoscopy in patients	Analyze
Formulate new techniques for endoscopy	Evaluate
Create new endoscopic mandates to assist the clinicians	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

### Learning Outcomes:

After completion of the course, students would be able to:

The student will learn the techniques used for endoscopy and procedure preparations

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### UNIT-I

Assisting the endoscopist in various endoscopic and colonoscopy procedure like introduction to ERCP suite management: Organization of hospital, Organization of ERCP rooms – Single and multiple units – Elective and emergency procedures.

Principle of surgical asepsis and ERCP room-before, during and after the procedure, special precautions in handlings patients with sepsis, blood borne infection -Hep.B,HCV,HIV etc.-Cleaning and disinfection of the articles and ERCP room (with special reference to HIV,HBV,HCV).

### UNIT-II

ERCP room equipment, instruments and maintenance: Basic ERCP unit — side viewing scope, C-arm facility — recordingand documentation of interesting procedure, specific instruments used diagnostic and therapeutic procedures — various sphincter tomes, guide wires, balloon dilators, baskets, lithotripsy handling — various types of stents — plastic and metal.

Diagnostic ERCP procedures — preparation of patient including transfer and positioning of the patient, assisting the anesthesiologist for induction of anesthesia and positioning the patient, assisting the endoscopes in various diagnosis ERCP procedures

### UNIT-III

Therapeutic ERCP procedures — Assisting endoscopist for CBD stone removal, CBD and CHD structure management, plastic and metal stent placement, getting tissue biopsy and brush cytology, pancreatic stent placement, maintaining patient safety and comfort in ERCP room — prevention of physical, electrical, chemical injuries \ hazards to patient — Maintenance of interpersonal relationship.

#### **UNIT-IV**

Pancreatectomy, drainage of pancreatic cyst (Pseudo cyst), resections of small bowel, sigmoid colon and rectum, hemi and total colostomy, colostomy — closure of colostomy, rectopexy and abdominoperineal resection, drainage of abscess(es) in- the region of the liver, hepatic resection, liver transplant, splenectomy, L-R Shunt, Esophageal varies, Gastric Varices, indication of treatment of bleeding lesions in the esophagus, glue Injection and EVL

Gastric polyp resection, percutaneous endoscopic gastrostomy, percutaneous Jejunostomy

### UNIT-V

Dilatation of structures of esophagus, balloon, bougies, CRE, Balloons etc.

Basic ERP procedure, premedication, position, stone retrieval and placement of stent, removal of stones from PD and CBD.

### Practical: -

- ERCP room equipment, instruments and maintenance: Basic ERCP unit side viewing scope, C-arm facility — recording and documentation of interesting procedure, specific instruments used diagnostic and therapeutic procedures — various sphincterotomes, guide wires, balloon dilators, baskets, lithotripsy handlingvarious types of stents plastic and metal.
- Diagnostic ERCP procedures preparation of patient including transfer and positioning
  of the patient, assisting the anesthesiologist for induction of anesthesia and positioning
  the patient, assisting the endoscopist in various diagnosis ERCP procedures.
- Therapeutic ERCP procedures Assisting endoscopist for CBD stone removal, CBD and CHD structure management, plastic and metal stent placement, getting tissue biopsy and brush cytology, pancreatic stent placement, maintaining patient safety and comfort in ERCP room prevention of physical, electrical, chemical injuries \ hazards to patient Maintenance of interpersonal relationship.
- Pancreatectomy, drainage of pancreatic cyst (Pseudocyst), resections of small bowel, sigmoid colon andrectum, hemi and total colectomy, colostomy — closure of colostomy, rectopexy and abdominoperineal resection, drainage of abscess(es) in the region of the liver, hepatic resection, liver transplant, splenectomy, L-R Shunt, Esophageal varices, Gastric Varices, indication of treatment of bleeding lesions in the esophagus, glueInjection and EVL
- Gastric polyp resection, percutaneous endoscopic gastrostomy, percutaneous Jejunostomy

### **Reference Books:**

- 1. Peter B.Cotton & Christopher B. Williams- text book of Practical Gastrointestinal endoscopy Peter B.Cotton & Christopher B. Williams -6<sup>th</sup> edition 2009
- 2.Cotton and Williams-text book if Practical Gastrointestinal endoscopy: The Fundamentals by Cotton and Williams -7<sup>th</sup> edition 2014.

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### Basics of Endoscopy & Endoscopic Instruments – II

Course Code	Course Paper Title	Panar Titla	Credits	Contact per week			Evaluation		
Course Code	Category	Taper Title	Credits	L	Т	P	Internal	External	Total
	Core	Basics of Endoscopy & Endoscopic Instruments – II	4	3	1	V.	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Basics of instruments used for endoscopy	Remember
The basics principle of endoscopy on the grounds of patient requirements	Understand
The techniques of endoscopy to assist the clinicians	Apply
The endoscopy techniques to access clinicians	Analyze
The need of endoscopy in patients	Evaluate
Formulate new techniques for endoscopy	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

### Learning Outcomes:

After completion of the course, students would be able to:

The student will learn the techniques used for endoscopy and procedure preparations

### UNIT-I

Dilatation of structures of esophagus, balloon, bougies, CRE, Balloons etc. Basic ERP procedure, premedication, position, stone retrieval and placement of stent, removal of stones from PD and CBD.Gastroduodenal stenting. Double balloon endoscopy, capsule endoscopy, different typesof capsules

### **UNIT-II**

ColonoscopypolypectomycolonicdilatationofstricturesbyBalloon.

Placement of expansile stents in colorectum

Emergency de-rotation of colon in sigmoid volvulus.

### UNIT-III

Advanced lap surgery, lap liver resections etc.

Therapeutic endoscopic and colonoscopy procedure — initial reputation of the patient — knowing about EVL and EST and assisting the endoscopist. Assisting the endoscopist in endoscopic and colonoscopy polypectomy, APC and FB removal. Maintaining patient safety and

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comfort in ER: Prevention of physical, electrical, chemical injuries \ hazards to patient — Maintenance of interpersonal relationship, orientation to legal and ethical issues involved in endoscopic room technique.

### Practical:

- Dilatation of structures of esophagus, balloon, bougies, CRE, Balloons etc.
- Basic ERP procedure, premedication, position, stone retrieval and placement of stent, removal of stones from PD and CBD.
- Gastroduodenal stenting.
- Double balloon endoscopy, capsule endoscopy, different types of capsules
- Colonoscopy polypectomy colonic dilatation of strictures by Balloon.
- Placement of expansile stents in colorectum
- 15. Emergency de-rotation of colon in sigmoid volvulus.
- Advanced lap surgery, lap liver resections etc.
- Therapeutic endoscopic and colonoscopy procedure initial resuscitation of the patient knowing about EVL and EST and assisting the endoscopist. Assisting the endoscopist in endoscopic and colonoscopy polypectomy, APC and FB removal. Maintaining patient safety and comfort in ER: Prevention of physical, electrical, chemical injuries \ hazards to patient Maintenance of interpersonal relationship, orientation to legal and ethical issues involved in endoscopic room technique.

### Reference Books:

- 1. Peter B.Cotton & Christopher B. Williams- text book of Practical Gastrointestinal endoscopy Peter B.Cotton & Christopher B. Williams -6<sup>th</sup> edition 2009
- 2. Cotton and Williams-text book if Practical Gastrointestinal endoscopy: The Fundamentals by -Cotton and Williams -7<sup>th</sup> edition 2014.

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### **Interpretation of Endoscopic Results**

Course Code	Course Paper Title	Credits -	Contact per week			Evaluation			
Course Code	Category	raper Title	Credits	L	Т	P	Internal	External	Total
	Core	Interpretation of Endoscopic Results	4	3	1	-	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
To use of necessary equipment for endoscopy.	Remember
Different techniques for endoscopy.	Understand
Endoscopy techniques for result analysis	Apply
The outcome of endoscopy.	Analyze
The endoscopy results on the basis of disease severity	Evaluate
Formulate new techniques and patients safety measures for endoscopy.	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcomes:

After completion of the course, students would be able to:

The student will learn and interpret endoscopy results after the procedure and follow ups.

### **UNIT-I**

Use of Fiberoptic endoscope, Indications for Biopsies, Contraindication for biopsies.

### UNIT-II

Endoscopic biopsy forceps, endoscopic bx forceps , Gastrointestinal Bx processing for light microscopy , interpretation of biopsies , interpretation of jejunal Bx

### **UNIT-III**

Interpreting jejunal Bx in malabsorption, Pattern of abnormal SI mucosa, SI bx, Abetalipoproteinemia, Eosinophilic enteritis, Lymphangiectasia

### **UNIT-IV**

Colonic bx, Differential diagnosis of IBD , Granuloma, Psedo-membranous Colitis , Collagenous Colitis , Lymphocytic Colitis.

### > Reference Books:

- 1. Peter B.Cotton & Christopher B. Williams- text book of Practical Gastrointestinal endoscopy Peter B.Cotton & Christopher B. Williams -6<sup>th</sup> edition 2009
- 2.Cotton and Williams-text book if Practical Gastrointestinal endoscopy: The Fundamentals by Cotton and Williams -7<sup>th</sup> edition 2014.

### Practical:

- To estimate different kind of infection in GI tract.
- Biopsy interpretation
- SI mucosa analysis
- Estimation of different types of Colitis
- · Stool analysis
- Identification of microorganisms in stool
- Estimation of endoscopy

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# **Clinical Posting**

Course Code	Course	Course Paper Title	Credits	Contact per week			Evaluation			
Course Code	Category	Credits	L	Т	P	Internal	External	Total		
	Clinical Posting	Basics of Endoscopy & Endoscopic Instruments – II	2	2			20	80	100	

<sup>-45</sup> Days Clinical posting is mandatory

# **Discipline Specific Elective**

# **General Principles and Practices of Public Health**

Course Code	Course	Paner Little	Credits -	Contact per week			Evaluation		
	Category			L	Т	P	Internal	External	Total
	Discipline Specific Elective	General Principles and Practices of Public Health	3	3	-	-	20	80	100

#### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
To provide students an insight into core concepts, theories and accounting practices which are adapted and practice on day to day basis in the organization.	Remember
It also helps to develop analytical and problem-solving skills which are required by administrators.	Understand
To learn Patient's record keeping preoperatively, during anesthesia and post-operatively.	Apply
To learn Principles and techniques of temperature monitoring.	Analyze
Positioning during surgical procedures	Evaluate
Able to manage Indenting, Record keeping and inventory maintenance	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

LearningOutcome

To acquire understanding of the functions of management and administration of the healthcare business.

To understand healthcare delivery systems.

To acquire and practice leadership and managerial skills that will

positively affect performance as a healthcare manager

Learn the basic nursing skills of various surgical procedures including

the surgical instruments used in the surgical procedures Assist in various invasive and non-invasive procedures

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#### **UNIT-I**

#### Introduction to Patient Care:

a) Principles of patient care b)Types of patients (gender, age, diseases, severity of illness, triage) Communication:

Communication with doctors, colleagues and other staffs. b)Non-verbal communication, Inter-personnel relationships.c)patient contact techniques, communication with patients and their relatives Documentation:

- a. Importance of documentation,
- b. Initial and follow up notes
- c. Documentation of therapy, procedures and communication.

#### UNIT-II

### Universal Precautions and Infection Control:

- a) Hand washing and hygiene.
- b) Injuries and Personal protection, Insulation and safety procedures.
- c) Aseptic techniques, sterilization and disinfection.
- d) Disinfection and Sterilization of devices and equipment
- e) Central sterilization and supply department
- f) Biomedical Medical waste management.

#### UNIT-III

#### Medication Administration:

- a) Oral / Parenteral route
- b) Parenteral medication administration: Intra venous, intra muscular, sub-cutaneous, intra dermal routes, Intra venous Infusion
- c) Aerosol medication administration, Oxygen therapy
- d) Intravenous fluids) Blood and blood component transfusion Position and Transport of patient:
- Patient position, prone, lateral, dorsal, dorsal recumbent, Fowler's positions, comfort measures, bed making, rest and sleep.
- b) Lifting and transporting patients: lifting patients up in the bed, transferring from bed to wheel chair, transferring from bed to stretcher.
- c) Transport of ill patients (inotropes, intubated /ventilated patients)

#### **UNIT-IV**

#### Bedside care:

a) Methods of giving nourishment: feeding, tube feeding, drips, transfusion.b)Recording of pulse, blood pressure, respiration, saturation and temperature.c)Bedside management: giving and taking bed pan, urine container.d)Observation of stools, urine, sputum, drainse) Use and care of catheters and rubber goods.f)Care of immobile/bed ridden patients, bed sore and aspiration prevention

#### Monitoring of Patient:

a) Pulse, ECG (Cardiac Monitor), Oxygen Saturation, Blood Pressure, Respiration b)Multi parameter monitors, Capnography and End Tidal CO2 (ETCO2)c)Hydration, intake and output monitoringd)Monitoring ventilator parameters: Respiratory Rate, Volumes, Pressures, Compliance, Resistance

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#### UNIT-V

## Dressing and wound care:

a) Bandaging: basic turns, bandaging extremities, triangular bandages and theirapplication.b)Surgical dressing: observation of dressing procedures.c)Suture materials and suturing techniquesd)Splinting e) Basic care of patient with burns.

#### Reference books:

- 1. Hospital and patient care management Dr. Vidhya Srinivasan & Dr. Akshay Ch. Deka-2022
- 2. Principles of hospital practice and patient care P Srinivasulu Reddy 1<sup>st</sup> edition -2019
- 3. Principles & Practice of Critical Care P.K Verma 3<sup>rd</sup> edition- 2019.
- 4.Standard treatment guidelines a manual of medical therapeutics- Sangeeta Sharma & GR Sethi 6<sup>th</sup> edition 2021.

## Forensic Psychology

Course Code	Course	Course Category Paper Title	Credits -	Contact per week			Evaluation		
	Category			L	Т	P	Internal	External	Total
	Discipline Specific Elective	Forensic Psychology	3	3	72	-	20	80	100

#### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Develop understanding about the interplay of various psychological	Remember
factors.	
Respond & familiarize with basics of psychology.	Understand
Understand the psychology of offenders & defenders.	Apply
Apply psychological knowledge to the legal system.	Analyze
Learn the psychology of eyewitness testimony.	Evaluate
Receive complex ethical issues and resolve ethically.	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

On completion of this course, the students will be able to do the following:

- 1. Cognitive Thinking.
- 2. Analyze complex & diverse concepts
- 3. Think critically.

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**UNIT-I** 

The Psychology of Criminal Conduct

Offender Profiling

**UNIT-II** 

Eyewitness Testimony and Identification

Investigative Interviewing of Children

UNIT-III

Investigative Interviewing of Suspects

The Psychology of Lying and the Detection of Deception

**UNIT-IV** 

The Psychology of False Confessions

Famous Miscarriages of Justice

**UNIT-V** 

Jury and Decision-Making

Juvenile Delinquency and Underage Crimes

The Psychologist as Expert Witness: Practical and Ethical Issues

## Reference books:

- $1. The\ Forensic\ Psychology\ of\ Criminal\ Minds-\ Katherine\ Ramsland-1^{st}\ edition\ -2010$
- 2.Forensic Psychology Workbook- Connor Whiteley 2018
- 3. Forensic Psychology- Avery short introduction-David Canter 2010.
- 4. Forensic Psychology-Dr Lakshmaeshwar Thakur-2019.

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## **BASIC EMERGENCY MANAGEMENT**

Course Code	Course	Paper Title	Credits -	Contact per week			Evaluation			
	Category		Credits	L	Т	P	Internal	External	Total	
	Ability Enhanceme nt Course	Basic Emergency Management	2	2	-	-	20	80	100	

#### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Emergency plan during crisis & knowledge of emergency equipment.	Remember
Emergency plan specifies procedures for handling sudden or unexpected situations.	Understand
Recognize common, urgent and emergent problems	Apply
Organize planning of special resuscitative procedures.	Analyze
Characterize medical & surgical emergencies.	Evaluate
Receive knowledge of emergency drugs or medicines.	Create
	Emergency plan during crisis & knowledge of emergency equipment.  Emergency plan specifies procedures for handling sudden or unexpected situations.  Recognize common, urgent and emergent problems  Organize planning of special resuscitative procedures.  Characterize medical & surgical emergencies.

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

On completion of this course, the students will be able to do the following:

- 1. Emergency planning
- 2. Prevent fatalities & injuries
- 3. Complex medical and surgical emergencies management.

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#### **UNIT-I**

## **Emergency Equipment**

- 1. Laryngoscopes
- 2. Endo-tracheal tubes (ETT), boogie
- 3. Ambu bag and mask
- 4. Airway adjuncts, supra-glottic airway devices including Laryngeal mask airway (LMA)
- 5. Types of oxygen masks, venturi etc.
- 6. Oropharyngeal and nasopharyngeal airways (OPA and NPA)
- 7. ICD tubes, bags, jars, instrument tray
- 8. Suction apparatus
- 9. Pulse oximeter
- 10. EtCO2 monitor
- 11. Oxygen pipe-line and medical gas cylinders, pipelines and manifold
- 12. Ambulance (Cervical) Collar, Philadelphia Collar

#### **UNIT-II**

## **Introductions to Emergency Services**

Principles of resuscitation

- Sudden cardiac death
- 2. Cardiac, respiratory arrest
- 3. Basic cardiopulmonary resuscitation in adults, neonates, pediatrics& pregnancy.
- 4. Advanced cardiac life support

#### UNIT-III

Specific resuscitative procedures

- 1. Airway management
- 2. Breathing and ventilation management
- 3. Venous and intraosseous access
- 4. Defibrillation and cardioversion
- 5. Fluid and blood resuscitation
- 6. Vasoactive agents in resuscitation
- 7. Arrhythmias

### **UNIT-IV**

- 1. Medical emergencies
- 2. Fluids and electrolytes
- 3. Respiratory Emergencies
- 4. Gastrointestinal Emergencies
- 5. Cardiovascular Emergencies
- 6. Central Nervous System Emergencies
- 7. Genito urinary emergencies
- 8. Hematological Disorders
- 9. Endocrine and Metabolic Emergencies

#### **UNIT-V**

**Emergency Drugs** - Drug introduction, indication, contra-indications, side – effects and routes of administration with doses of following drugs:

Toxicology

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Emergencies due to venomous bites and stings: **Industrial Hazards** Obstetrical emergencies Mental Health Emergencies Pediatric emergencies

## Reference books:

- 1. Medical Emergencies in general practice-S.P.Gupta & O.K.Gupta-2011
- Manual of Emergency Medicine-Lippincott & Williams & Wilkins-6<sup>th</sup> edition-2011
   Handbook of casualty and Emergency –Rajiv-2<sup>nd</sup> edition-2019.
   Emergency medicines-SN Chugh & Ashima Chugh-5<sup>th</sup> edition-2019

## SEMESTER –IV Basic Medicine

Course Code	Course Category Paper Title	Credits -	Contact per week			Evaluation			
Course Code		Taper Title	Credits	L	Т	P	Internal	External	Total
	Core	Basic Medicine	4	3	1		20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Requirement of basic diseases and their diagnosis	Remember
Assist the physician by analyzing the report	Understand
The reports and disease symptoms to assist the physicians	Apply
Organize planning of special resuscitative procedures.	Analyze
Characterize medical & surgical emergencies.	Evaluate
Receive knowledge of emergency drugs or medicines.	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

On completion of this course, the students will be able to do the following:

- 1. Emergency planning
- 2. Prevent fatalities & injuries
- 3. Complex medical and surgical emergencies management.

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#### UNIT-I

Basic resuscitation equipment Sedation in endoscopy Drugs for resuscitation UGIE–Endoscopy findings

UNIT-II

LGIE–Endoscopy findings ERCP

Endoscopic management of GI bleed

Endoscopics tenting

**UNIT-III** 

GI and liver disease

Hematology

Renal Diseases

**UNIT-IV** 

Bleeding disorders

Respiratory System

CNS

UNIT-V

Automatic nervous system

Diabetes Mellitus

## > Reference Books:

- 1. Must know Medicine by-Abhinav Aggarwal , Arunav Garg , Harshdeep singh , Karan Pal singh chahal , Kriti Ahuja .
- 2. Medicine simplified by Dr. Mukesh Bhatia (10<sup>th</sup> Edition)

#### Practical:

- 1. To estimate ACT, in provided unknown sample.
- 2. Estimate abnormal urine.
- 3.Bleeding time and Clotting time.
- 4.Blood glucose analysis by GOD-PODmethod.

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5. Analysis of TLC in given sample

6.Analysis of DLC in provided sample 7.Estimation of protein by FolinLowry method

**Basic Surgery** 

Course Code	Course	Paper Title	Credits	Contact per week			Evaluation		
Course Code	Category			L	Т	P	Internal	External	Total
	Core	Basic Surgery	4	3	1	-	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Requirement of basic surgical equipment's and OT preparation	Remember
before Procedure	
Surgical procedures and equipment preparation before the	Understand
procedure	
The surgical procedure	Apply
Result of surgery and affect of hygiene.	Analyze
Characterize medical & surgical emergencies.	Evaluate
Receive knowledge of emergency drugs or medicines.	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

On completion of this course, the students will be able to do the following:

- 1. Emergency planning
- 2. Prevent fatalities & injuries
- 3. Complex medical and surgical emergencies management.

UNIT-I

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Ulcer, Fistula, Sinus

Varicose veins and DVT

Burns

**UNIT-II** 

Acute and Chronic infections

Hemorrhage, Shock and Blood Transfusion

**UNIT-III** 

Acid-Base Balance, Fluid and Electrolytes

Esophagus, Stomach and Duodenum

**UNIT-IV** 

Liver, GB and Pancreas

Small and Large Intestine

UNIT-V

Rectum and Anal canal

Appendix and Hernia

## **Reference Books:**

#### Practical:

- 1. Patient Preparation for surgical procedure
- 2. Insertion of the Endoscope under the supervision of clinician
- 3. Visualization and Navigation of the patients throughout the procedure
- 4. Diagnostic or Therapeutic Procedures in OT
- 5. Removal of the Endoscope after the procedure.

PREPARATIONS FOR ENDOSCOPIC PROCEDURES & PAIENT CARE

Course Code	Course Category	Paper Title	Credits	Contact per week	Evaluation
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			L	T	P	Internal	External	Total
Core	Preparations for endoscopic procedures & patient Care	4	3	1		20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Participants will gain a comprehensive understanding of the	Remember
different types of endoscopic procedures, their indications, and	
the techniques involved in performing them. This includes	
knowledge of various endoscopic instruments, equipment, and	
their uses.	
Participants will acquire a detailed understanding of the relevant anatomical structures and their variations as seen during	Understand
endoscopy. They will also learn to recognize common	
pathological conditions and lesions encountered in endoscopic	
examinations.	
Participants will develop the necessary skills and dexterity to perform endoscopic procedures effectively and safely. This	Apply
involves learning the techniques for inserting and maneuvering	
the endoscope, visualizing and evaluating anatomical structures,	
and performing specific diagnostic or therapeutic interventions	
Organize planning of special resuscitative procedures.	Analyze
Characterize medical & surgical emergencies.	Evaluate
Receive knowledge of emergency drugs or medicines.	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

On completion of this course, the students will be able to do the following:

- Participants will learn about infection control measures, disinfection, and sterilization techniques to maintain a sterile and safe endoscopic environment.
- Participants will learn how to communicate test results, provide postprocedure instructions, and maintain accurate documentation of the procedure and patient care.

UNIT-I

Basic resuscitation equipment

Abul 49 | Page Sedation in endoscopy

**UNIT-II** 

Drugs for resuscitation

UGIE-Endoscopy findings

**UNIT-III** 

LGIE-Endoscopy findings

**ERCP** 

UNIT-IV

Endoscopic management of GI bleed

Endoscopies tenting

# **Reference Books:**

# ENVIRONMENTAL & BIOMEDICAL WASTE MANAGEMENT; ENTREPRENEURSHIP AND PROFESSIONAL MANAGEMENT

Course Code	Course Category	Paper Title	Credits	Contact per week	Evaluation
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			L	Т	P	Internal	External	Total
Core	Environmental & Biomedical Waste Management Entrepreneurship and Professional Management	4	3	1	() <b>—</b> .	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Student will gain a comprehensive understanding of the local, regional, and national regulations governing environmental and biomedical waste management.	Remember
Basics of waste management and entrepreneurship	Understand
Skills to develop a business plan tailored to the waste management industry. This includes market analysis, identifying target customers, defining services, creating pricing strategies, and developing marketing and sales plans, skills to develop a business plan tailored to the waste management industry. This includes market analysis, identifying target customers, defining services, creating pricing strategies, and developing marketing and sales plans.	Apply
The outcomes of waste management hygine and start up management.	Analyze
The results of maintaining hygienic conditions	Evaluate
Formulate the new mandates for hygine and new startups	Create

Learning Outcomes

- 1. The student will learn safety measure and waste management techniques.
- 2. The student will learn the fundamentals of entrepreneurship

## **UNIT I**

## **Bio Medical Waste Management**

- a. Introduction to bio-medical Waste
- b. Types of bio-medical waste
- c. Collection of bio-medical waste

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d. Treatment and safe disposal of bio-medical waste

#### UNIT II

- Ethics of Bio-Safety.
- Code of good and safe laboratory practice for support staff and responsibilities of the workers regarding Bio-safety.
- Rules for laboratory medicine.
- Set up of a laboratory o the basis of safety priority and Laboratory Bio-safety Guidelines.

#### **UNIT III**

- Laboratory Biosafety Level Criteria (BSL-1-4).
- Handling, transfer and shipment of specimen. Decontamination and disposal. Treatment and disposal technologies for health-care waste.
- Wastes management, life cycle of bio-medical wastes.
- Reduce recycle and reuse of wasters, technology used for bio-medical wastes treatment and disposal.

#### UNIT IV

- Chemical, electrical, fire and radiation safety. Safety organization.
- General safety checklist.
- Hazardous properties of instruments and Laboratory chemicals. Laboratory first-aid measures and Kit.
- Safety equipments. Safety signs.

### **UNIT V**

## Entrepreneurship:

- a. Definition, basic concept, need, scope and characteristics of entrepreneurship.
- b. Woman entrepreneurship.
- Assistance to small scale from enterprises national level organizations like SIDO, NSIC, NRDC, KVIC.
- d. Assistance to small scale enterprises from State level organizations like DOL, DIG, RFC, SISI, RHDC, Pollution Control Board, Rajasthan khadi & Village Industries Board, banks etc.
- e. Facilities to women entrepreneurs.

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#### Reference books:

- Waste Management and Sustainable Resource Recovery" by Debra R. Reinhart, Timothy G. Townsend, and Mark M. Benjamin.
- Waste Management Practices: Municipal, Hazardous, and Industrial" by John Pichtel:

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# DISCIPLINE SPECIFIC ELECTIVE

Communication skill for Health care professional

Course Code	Course Category	Paper Title	Credits	Contact per	Evaluation
	o mrogor y			week	53   Page

			L	T	P	Internal	External	Total
Discipline Specific Elective	Communication skill for Health care professional	3	3	( <del>),</del>	-	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Explain and describe effective and non-effective communication techniques	Remember
Differentiate between verbal and non-verbal communication.	Understand
Identify behaviors that interfere with effective communication	Apply
Understand interview techniques and demonstrate or explain appropriate patient education practices	Analyze
Characterize relationships among various health care professionals and patients of various educational levels.	Evaluate
Follow elements of active listening and benefits of professional communication	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

1. The purpose of this course is to prepare students with basic interpersonal and communication skills needed by the Medical Assistants in the medical office or clinic setting

#### UNIT-I

Identify practices for effective verbal communication with patients and other healthcare providers . Develop skills for listening and paraphrasing. Demonstrate methods of questioning the patient

**UNIT-II** 

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Explain how low health literacy may impact a patient's health. Describe strategies that will facilitate communication between a healthcare professional and a patient who is visually impaired, hearing impaired, or speaks a different language

#### **UNIT-III**

Identify the benefits of patient education. Distinguish the three types of learning styles. Describe the benefits of using visual aids and written materials

#### **UNIT-IV**

Explain how telecommunication, fax, and email differ from face-to-face communication. Discuss the guidelines for the effective use of the telephone in the healthcare setting. List the symptoms and conditions that require immediate medical help

#### **UNIT-V**

Explain the purposes of the parts of speech and punctuation. Illustrate correct sentence grammar

#### Reference books:

- 2. Communication Skills for the Healthcare Professional, First edition
- 3.McCorry, L., Mason, J, Lippincott Williams & Wilkins, Copyright 2011
- 3.Textbook of radiological safety- GK Rath 1st edition 2010
- 4. Aids to radiological differential diagnosis- Stephen Davies- Elsevier -6<sup>th</sup> edition -2013

SKILL ENHANCEMENT COURSE

of Abre

MEDICAL LAW

Course Code	Course	Paper Title	Credits	Contact per	Evaluation
	Category			week	55   Page

			L	T	P	Internal	External	Total
Skill Enhanceme nt Course	Medical Law	2	2	95	-	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Introduces learners to the linkages between the fields of law and health in order to assist them in taking informed	Remember
Contextualizes the constitutional dimension to 'right to health'	Understand
Relevant for doctors	Apply
Identify and value legal sources and norms in the field of medical law at both a national, and international, level	Analyze
Characterize the rules of medical law in a qualified manner and to identify possible solutions to biomedical legal problems	Evaluate
Receive the interplay and differences between different types of legal responsibilities and sanctions in medical law	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

- 1. The students are expected after the conclusion of the course to be able to:
- 2. Understand the interplay between ethics and law in the field of biomedicine
- 3. To identify and analyse the conflicts of interest and legal problems that are relevant in different areas of medical law

**UNIT-I** 

Medical ethics - Definition - Goal – Scope Introduction to Code of conduct

UNIT-II

Basic principles of medical ethics - Confidentiality

Malpractice and negligence - Rational and irrational drug therapy

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#### **UNIT-III**

Autonomy and informed consent - Right of patients Care of the terminally ill- Euthanasia

#### **UNIT-IV**

#### Organ transplantation

Medico legal aspects of medical records – Medico legal case and type- Records and document related to MLC - ownership of medical records - Confidentiality Privilege communication - Release of medical information - Unauthorized disclosure - retention of medical records - other various aspects.

## **UNIT-V**

Professional Indemnity insurance policy

Development of standardized protocol to avoid near miss or sentinel events

Obtaining an informed consent

#### Reference books:

- 1.Law relating to medical negligence and compensation- Dr.K.P.D.A. Prabakar & Dr.J.Paulraj Joseph 2023
- 2.A textbook of medical jurisprudence and toxicology Justice K Kannan -25<sup>th</sup> edition 1<sup>st</sup> edition 2016
- 3.Law the doctor must know- Hitesh J Bhatt & Geetebdra Sharma 2017
- 4.Law on medical negligence and legal remedies Dr.Annu Bahl Mehra & Harshit Kiran-2022

# SEMESTER –V ADVANCE ENDOSCOPIC TECHNOLOGY

Course Code	Course Category	Paper Title	Credits	Contact per week	Evaluation
	(CA) 88			WEEK	

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			L	T	P	Internal	External	Total
Core	Advance Endoscopic Technology	4	3	1	_	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Participants will gain a comprehensive understanding of the	Remember
different types of endoscopic procedures, their indications, and the	
techniques involved in performing them. This includes knowledge	
of various endoscopic instruments, equipment, and their uses.	
Participants will acquire a detailed understanding of the relevant	Understand
anatomical structures and their variations as seen during endoscopy.	
They will also learn to recognize common pathological conditions	
and lesions encountered in endoscopic examinations.	
Participants will develop the necessary skills and dexterity to	Apply
perform endoscopic procedures effectively and safely. This involves	WARRIED W. DAY
learning the techniques for inserting and maneuvering the	
endoscope, visualizing and evaluating anatomical structures, and	
performing specific diagnostic or therapeutic interventions	
Organize planning of special resuscitative procedures.	Analyze
Characterize medical & surgical emergencies.	Evaluate
Receive knowledge of emergency drugs or medicines.	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

1. The purpose of this course is to prepare students for endoscopy under the assistance of clinicians.

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## DIAGNOSTIC & THERAPEUTC ENDOSCOPY

Course Code	Course	Paper Title (	Credits	Contact per week			Evaluation			
Course Code	Category	raper Title	104000000000000000000000000000000000000	L	Т	P	Internal	External	Total	
	Core	Diagnostic & Therapeutic Endoscopy	4	3	1	-	20	80	100	

#### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Classify various diagnostic and therapeutic endoscopic and colonoscopic procedures	Remember
Prepare endoscopic room for the procedure	Understand
Identify the instruments and equipments used for various endoscopic procedures	Apply
Follow standard precaution and waste management protocols in endoscopy room	Analyze
Monitor the patient in recovery room	Evaluate
Maintain clean and sterile environment in endocopic suite along with sterilisation of the endoscopy and colonoscopy	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

1.At the end of the course the students will be able to acquire knowledge on the basic concepts of endoscopic room and ERCP suite arrangement and develop desirable skill and attitude in providing necessity care to the patient before, during and immediately after diagnostic and therapeutic endoscopic and colonoscopic procedures. They will also acquire enough knowledge and skill to handle patients of upper and lower GI bleed at ICU/HDU

#### **UNIT-I**

Introduction to endoscopy room Management: Organization of Hospital - Organization of endoscopy rooms - Single and Multiple endoscopy units - Elective and emergency procedures.

UNIT-II

Principles of Surgical Asepsis and Hygenic endoscopy Room: Carbolization and fumigation - Scrubbing, gowning, gloving - Preparation of sterile field. - Preparation of tables, equipments, instruments for the procedure - Care of endoscopy room - before, during & after the procedure - Special Precaution in handlings patients with sepsis, blood borne infection - Hep.B, HCV, HIV etc - Cleaning and disinfection of the articles and endoscopy room (with special reference to HIV, HBV & HCV) Terminal disinfection of endoscopy room.

#### UNIT-III

Endoscopy Room equipments, Instruments and Maintenance: Basic endoscopy unit – forward viewing, single channel and double channel endoscopy and Specific instruments used in endoscopic and colonoscopic procedures.

#### **UNIT-IV**

Diagnostic endocopic procedure- giving oral anaesthetic agent, preparation of patient including transfer & positioning of the patient. Diagnostic colonoscopic procedure- Assisting the anesthesiologist for induction of anaesthesia and positioning the patient.

#### **UNIT-V**

Therapeutic endoscopic and colonoscopic procedure- initial resustation of the patient- knowing about EVL and EST and assisting the endoscopist. assisting the endoscopist in endoscopic and colonoscopic polypectomy, APC and FB removal. Maintaining Patient Safety and Comfort in ER: Prevention of physical, electrical, chemical injuries/hazards to patient - Maintenance of interpersonal relationship, Orientation to legal & ethical issues involved in endoscopic room technique

#### Reference books:

- 1. Practical gastrointestinal endoscopy the fundamentals Peter B Cotton
- 2. Introduction to Operating room Technique Kandaswami
- 3. Theatre Technique Dixon Eileen
- 4. Fundamentals of Operation Theatre Service T.K.Datta
- 5. SAGES manual perioperative care in minimally invasive surgery. Richard I. Whelan, James w. fleshman, Dennis L. fowler. Springer edition

#### PRACTICAL: DIAGNOSTIC AND THERAPEUTIC ENDOSCOPIC

Clinical Postings in: Endoscopy room Operation theatre Procedure to be completed

- > Fumigation of the ER
- Cleaning & disinfection of articles.

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- > Packing articles for sterilization
- > Sterilization of equipments
- > Setting up of table for various diagnostic and therapeutic procedures
- Assisting the endoscopist in various endoscopic and colonoscopic proecdures
- Positioning the patients
- > Assisting with anaesthesiologist
- ➤ Observation & monitoring the patient in recovery room
- > Terminal disinfection

## **DIAGNOSTIC & THERAPEUTIC ERCP**

Course Code	ourse Code Course Category Paper Title Credits	Contact per week		per Evaluation					
Course Code		raper Title	Credits	L		P	Internal	External	Total
	Core	Diagnostic & Therapeutic ERCP	4	3	1	-	20	80	100

## **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Classify various diagnostic and therapeutic endoscopic and colonoscopic procedures	Remember
Prepare endoscopic room for the procedure	Understand
Identify the instruments and equipments used for various endoscopic procedures	Apply
Follow standard precaution and waste management protocols in endoscopy room	Analyze
Monitor the patient in recovery room	Evaluate
Maintain clean and sterile environment in endocopic suite along with sterilisation of the endoscopy and colonoscopy	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome - At the end of the course the students will be able to acquire knowledge on the basic concepts of ERCP suite arrangement and develop desirable skill and attitude in providing necessity care to the patient before, during and immediately after diagnostic and therapeutic ERCP procedures.

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#### UNIT-I

Introduction to ERCP suite Management: Organisation of Hospital - Organisation of ERCP rooms - Single and Multiple units - Elective and emergency procedures.

#### UNIT-II

Principles of Surgical Asepsis and ERCP Room: - Preparation of tables, equipments, instruments for the procedure - Care of ERCP room - before, during & after the procedure - Special Precaution in handlings patients with sepsis, blood borne infection - Hep.B, HCV, HIV etc. - Cleaning and disinfection of the articles and ERCP room (with special reference to HIV, HBV & HCV).

#### **UNIT-III**

ERCP Room equipments, Instruments and Maintenance: Basic ERCP unit – side viewing scope. C-arm facility- recording and documentation of interesting procedure. Specific instruments used diagnostic and therapeutic procedures- various sphincterotomes, guide wires, balloon dilators, baskets, lithotripsy handling, - various types of stents- plastic and metal.

#### UNIT-IV

Diagnostic ERCP procedures- preparation of patient including transfer & positioning of the patient. Assisting the anesthesiologist for induction of anaesthesia and positioning the patient. Assisting the endoscopist in various diagnostic ERCP procedures.

#### **UNIT-V**

Therapeutic ERCP procedures- Assisting endoscopist for CBD stone removal, CBD and CHD stricture management, plastic and metal stent placement, getting tissue biopsy and brush cytology. Pancreatic stent placement. Maintaining Patient Safety and Comfort in ERCP room: Prevention of physical, electrical, chemical injuries/hazards to patient - Maintenance of interpersonal relationship.

#### Reference books:

- 1. Practical gastrointestinal endoscopy the fundamentals Peter B Cotton
- 2. Introduction to Operating room Technique Kandaswami
- 3. Theatre Technique Dixon Eileen
- 4. Fundamentals of Operation Theatre Service T.K.Datta
- 5. SAGES manual perioperative care in minimally invasive surgery. Richard l. Whelan, James w. fleshman, Dennis L. fowler. Springer edition

#### PRACTICAL: DIAGNOSTIC AND THERAPEUTIC ERCP;

Clinical Postings in: ERCP suite Operation theatre

Procedure to be completed Setting up table for various diagrams and therapeutic ERCP procedures Assisting the endoscopist in diagnostic ERCPs Assisting the endoscopist in therapeutic ERCPs Assisting the endoscopist in various stent placements Maintaing and sterilizing various special instruments and equipments At the end of the course student will be able to understand the basic concepts of all the endoscopic and ERCP procedures and the instruments /equipments and will be able to assist all diagnostic and therapeutic procedures.

Immunology

Course Code	Course	Paper Title	Credits	Contact per week			Evaluation		
Course Code	Category	raper Title	Credits	L	Т	P	Internal	External	Total
	Core	Immunology	4	3	1	-	20	80	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Recall the fundamental concepts and components of the immune system.	Remember
Explain the principles and mechanisms of immune responses against pathogens and diseases.	Understand
Apply immunological knowledge to diagnose and treat immune-related disorders.	Apply
Analyze experimental data to understand immunological processes and interpret research findings.	Analyze
Critically evaluate the efficacy and limitations of immunological techniques and therapies.	Evaluate
Develop innovative approaches and strategies for immunological research and therapeutic interventions.	create

Taxonomy: remember, understand, apply, analyze, evaluate, create

## Learning Objectives

- 1. Understand the basic principles of immunology, including the immune system's components and their functions.
- 2. Explain the mechanisms of immune responses and how they protect the body against pathogens.
- 3. Describe the types of immunity, including innate and adaptive immunity, and their roles in disease prevention.
- 4. Recognize the importance of immunization and its impact on public health.

- 1. History and introduction to immunology
- 2. Immunity

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- 2.1 Innate
- 2.2 Acquired immunity
- 2.3 Basic concepts about their mechanisms
- 3. Definition, types of antigens and determinants of antigenicity
- 4. Definition, types, structure and properties of immunoglobulin
- 5. Antigen-Antibody reactions
- 5.1 Definition
- 5.2 Classification
- 5.3 General features and mechanisms
- 5.4 Applications of various antigen antibody reactions
- 6. Principle, procedure and applications of under mentioned in Medical Microbiology:
- 6.1 Complement fixation test
- 6.2 Immuno- fluorescence
- 6.3 ELISA
- 6.4 SDS-PAGE
- 6.5 Western blotting
- 7. Principle, procedure and interpretation of various serological tests:
- 7.1 Widal
- 7.2 VDRL
- 7.3 ASO
- 7.4 CRP
- 7.5 Brucella tube agglutination
- 7.6 Rose-Waaler
- 8. Complement system:
- 8.1 Definition
- 8.2 Basic concepts about its components
- 8.3 Complement activation pathways
- 9. Immune response:
- 9.1 Introduction
- 9.2 Basic concepts of Humoral and Cellular immune responses

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- 10. Hypersensitivity:
- 10.1 Definition
- 10.2 Types of hypersensitivity reactions
- 11. Basic concepts of autoimmunity and brief knowledge about autoimmune diseases
- 12. Automation in diagnostic serology
- 13. Vaccines:
- 13.1 Definition
- 13.2 Types
- 13.3 Vaccination schedule
- 13.4 Brief knowledge about \_Extended programme of immunization' (EPI) in India

## **Suggested Readings:**

- 1. Practical Medical Microbiology by Mackie & McCartney Volume 1 and 2
- 2. Text book of Microbiology by Ananthanarayanan
- 3. Medical Microbiology by Paniker& Satish Gupte
- 4. Medical laboratory Technology Vol. I, II, III by Mukherjee
- 5. Medical Laboratory manual for tropical countries Vol II Microbiology by Monica

Cheesbrough

- 6. Immunology by Riot
- 7. Basic & Clinical Immunology by P. Daniel Fudenberg. H. Hugh and Stites

ABILITY ENHANCEMENT COURSE

M Abus

## MEDICAL PSYCHOLOGY

Course Code	Course	Paper Title	Credits		onta per weel		I	Evaluation	
	Category	raper ritte	Т	P	Internal	External	Total		
	Ability Enhanceme nt Course	Medical Psychology	2	2	-	-	20	80	100

#### **Course Outcomes**

After completing this course, the student will be able to:

Remember
Understand
Apply
Analyze
Evaluate
Create
_

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcomes

- 1. Cognitive thinking
- 2. Demonstrate skills in communication.
- 3. Ethical behavior

### UNIT-I

Introduction to psychology

Intelligence, Learning, Memory, Personality, Motivation

#### **UNIT-II**

Body integrity- one's body image

Patient in his Milan

#### **UNIT-III**

Self-concept of the therapist, Therapist patient relationship-some guidelines

Illness and its impact on the patients.

#### **UNIT-IV**

Maladies of the age and their impact on the patient's own and others concept of his body image.

#### **UNIT-V**

Adapting changes in vision

Why Medical Psychology needs / demands commitment?

#### Reference book:

- 1.Fundamentals of Psychology for graduate nurses- P Prakash-1<sup>st</sup> edition- 2016
- 2. Modern clinical psychology-Sheldon J. Korchin-2004
- 3.Psychology Robert A .Baron & Girishwar Misra-5<sup>th</sup> edition 2000
- 4. Applied psychology for nurses R Sreevani- 4th edition- 2021

## **BIOSTATISTICS & RESEARCH METHODOLOGY**

Course Code	Course	Paper Title	Credits	Contact per week			Evaluation		
	Category		Credits	L	Т	P	Internal	External	Total
	Discipline Specific Elective	Biostatistics & Research Methodology	3	3	-	-	20	80	100

#### **Course Outcomes**

After completing this course, the student will be able to:

To enable students to present, analyze and interpret data.	D
	Remember
To enable students to use concepts of probability in business situations.	Understand
To enable students to make inferences from samples drawn from large datasets.	Apply
To enable students to apply univariate and multivariate statistical techniques	Analyze
Revise the issues in ethical research	Evaluate
Follow the basic concepts of biostatistics.	Create
	To enable students to use concepts of probability in business situations.  To enable students to make inferences from samples drawn from large datasets.  To enable students to apply univariate and multivariate statistical techniques  Revise the issues in ethical research

Taxonomy: Receive, Respond, Value, Organize, Characterize

## Learning Outcome

- 1. To understand the importance & Methodology for research
- To learn in detail about sampling, probability and sampling distribution, significance tests correlation and regression, sample size determination, study design and multivariate analysis.

**UNIT-I** 

Introduction to research methods.

Sampling methods

UNIT-II

Identifying research problem

Developing a research proposal

UNIT-III

Ethical issues in research

UNIT-IV

Research design

Types of Data

**UNIT-V** 

Basic Concepts of Biostatistics

Research tools and Data collection methods

#### Reference books:

- 1.Research methodology- CR K othari & Gaurav Garg 4th edition 2019
- 2.Introduction to research methodology Bhanwar Lal Garg, Renu Kavdia, Sulochana Agarwal & Umesh kumar Agarwal 2019
- $3. Research\ methodology\ for\ health\ professionals-RC\ Goyal-2^{nd}\ edition-2023$
- 4.Research Methodlogy and applied statistics DN Sansanwal 2020

DISCIPLINE SPECIFIC ELECTIVE

ENTERPRENEURSHIP DEVELOPMENT

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Course Code	Course	Paper Title	Credits		onta per weel		I	Evaluation	
	Category	Taper Title	L T P	Internal	External	Total			
	Ability Enhanceme nt course	Entrepreneurship Development	3	3	_	_	20	80	100

After completing this course, the student will be able to:

CO Number	CO Statement	Taxonomy	
	Inspire students and help them imbibe an entrepreneurial mind-set.	Remember	
	Respond entrepreneurship impacted the world and their country.	Understand	
	Introduced to key traits and the DNA of an entrepreneur	Apply	
	Organize the opportunity to assess their own strengths	Analyze	
	Understand the DNA of an entrepreneur and assess their strengths and weaknesses from an	Evaluate	
	Receive knowledge of Entrepreneurial perspective	Create	

Taxonomy: Receive, Respond, Value, Organize, Characterize

## Learning Outcomes

- 1. Develop awareness about entrepreneurship and successful entrepreneurs.
- 2. Develop an entrepreneurial mind-set by learning key skills such as design, personal selling, and communication.
- 3. Understand the DNA of an entrepreneur and assess their strengths and weaknesses from an
- 4. Entrepreneurial perspective.

**UNIT-I** 

## Introduction to Entrepreneurship

Meaning and concept of entrepreneurship, the history of entrepreneurship development, role of

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entrepreneurship in economic development, Myths about entrepreneurs, agencies in entrepreneurship management and future of entrepreneurship types of entrepreneurs.

#### **UNIT-II**

#### The Entrepreneur

Why to become entrepreneur, the skills/ traits required to be an entrepreneur, Creative and Design Thinking, the entrepreneurial decision process, skill gap analysis, and role models, mentors and support system, entrepreneurial success stories.

#### **UNIT-III**

## E-Cell

Meaning and concept of E-cells, advantages to join E-cell, significance of E-cell, various activities conducted by E-cell

#### **UNIT-IV**

<u>Communication</u> Importance of communication, barriers and gateways to communication, listening to people, the power of talk, personal selling, risk taking & resilience, negotiation.

#### **UNIT V**

Introduction to various forms of business organization (sole proprietorship, partnership, corporations, Limited Liability Company), mission, vision and strategy formulation.

## Reference Books:

- 1:Title Entrepreneurial DevelopmentAuthor S S Khanka Edition reprint Publisher S. Chand Publishing, 2006
- 2: Entrepreneurship Development and Business Ethics Paperback 1 January 2019by Abhik Kumar Mukherjee and Shaunak Roy Author
- 3: Margie Lovett Scott, Faith Prather. Global health systems comparing strategies for delivering health services. Joney& Bartlett learning, 2014
- 4: Taxmann's Entrepreneurship development CA(Dr.)Abha Mathur- 2021.

INTRODUCTION TO QUALITY & PATIENT SAFETY

Course Code	Course	Paper Title	Credits		onta per veel		Evaluation		
Course Code	Category	Taper Title	Credits	L	Т	P	Internal	External	Total
	Discipline specific elective	Introduction to Quality & Patient Safety	2	2	2	-	40	60	100

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describes the Quality assurance and management	Remember
Discuss the Basics of emergency care and life support skills	Understand
Demonstrate the processes used in developing communication &Impact of communication skills on Organizational design	Apply
Define the Infection prevention and control	Analyze
Revise the Antibiotic Resistance	Evaluate
Follow the skills required for Disaster preparedness and management - Fundamentals of emergency management,	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

Use healthcare data and analytics to measure healthcare quality and patient safety and plan improvement measures.

Participate in research projects that can lead to quality improvement, risk reduction and enhanced patient safety within the healthcare system.

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<u>Quality assurance and management</u> – Concepts of Quality of Care, QualityImprovement Approaches,StandardsandNorms,IntroductiontoNABHguidelines

#### UNIT-II

<u>Basics of emergency care and life support skills</u>- Basic life support (BLS), Vitalsignsandprimaryassessment, Basicemergencycare—firstaidandtriage, Ventilations Including use of bag-valve-masks (BVMs), Choking, rescue breathing methods, One-andTwo-

rescuerCPR

#### UNIT-III

<u>Bio medical waste management and environment safety</u> -Definition of Biomedical Waste, Waste minimization, BMW – Segregation, collection, transportation, treatment and disposal (including color coding), Liquid BMW, Radioactive waste, Metals/ Chemicals / Drug waste, BMW Management & methods of disinfection, Modern Technology for handling BMW, Use of Personal protective equipment (PPE), Monitoring & controlling of cross infection (Protective devices)

#### **UNIT-IV**

<u>Infection prevention and control</u>-Evidence-based infection control principles and practices [such as sterilization, disinfection, effective hand hygiene and use of Personal protective equipment (PPE)], Prevention & control of common healthcare associated Infections, Components of an effective infection control program, Guidelines (NABH and JCI) for Hospital Infection Control

#### UNIT V

<u>Antibiotic Resistance</u> - History of Antibiotics, How Resistance Happens and Spreads, Types of resistance- Intrinsic, Acquired, Passive, Trends in Drug Resistance, Actions to Fight Resistance, Bacterial persistence, Antibiotic sensitivity, Consequences of antibiotic resistance. Disaster preparedness and management - Fundamentals of emergency management, Psychological impact management, Resource management, Preparedness and risk reduction, information management, incident command and institutional mechanisms.

#### Reference books:

- 1. Handbook of healthcare quality & patient safety- Girdhar J Gyani & Alexander Thomas  $-2^{\rm nd}$  edition- 2017
- 2.Total quality management in the healthcare industry: An efficient guide for healthcare management- Balasubramanian Mahadevan 2022
- 3. Step by step Quality Hospital Care- Farooq Jan- 1st edition 2013
- 4. Patient safety and healthcare improvement Willey Blackwell- 1st edition 2014

# SEMESTER -VI BIOSTATISTICS & LAB MANAGEMENT

Course Code	Course	Paper Title	Credits	-200	onta per weel		I	Evaluation	
Course Code	Category	Taper Title	Cicuis	L	Т	P	Internal	External	Total
	Core	Biostatistics & Lab Management	4	3	1	-	20	80	100

#### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
To have a basic knowledge of biostatistics and its applications in medicine	Remember
To know various types of data presentation and data summarization in Medical field	Understand
To have overview of data analysis and sampling techniques	Apply
To understand various study designs in Medical field	Analyze
To know applications of various study designs in Medical Research	Evaluate
	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome: The student will learn the basics of biostatics and lab management.

# Unit I Introduction and Presentation of data

Meaning, Branches of Statistics, Uses of statistics in medicine, Basic concepts, Scales of measurement, Collection of data, Presentation of data; Tabulation, Frequency Distribution, Diagrammatic and Graphical Representation of Data.

## Unit II Measures

# of central tendency and Measures of Variation

Arithmetic Mean (Mean), Median, Mode, Partition values, Range, Interquartile range, Mean Deviation, Standard Deviation, Coefficient of Variation.

# Unit III Probability and standard distributions

Definition of some terms commonly encountered in probability, Probability distributions; Binomial distribution, Poisson distribution, Normal distribution, Divergence from normality; Skewness and kurtosis

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## **Unit IV Census**

#### and Sampling Methods

Census and sample survey, Common terms used in sampling theory, Non-probability (Non random) Sampling Methods; Convenience sampling, Consecutive Sampling, Quota sampling, Snowball sampling, Judgmental sampling or Purposive sampling, Volunteer sampling, Probability (Random) Sampling methods; Simple random sampling, Systematic Sampling, Stratified Sampling, Cluster sampling, Multi-stage sampling, Sampling error, Non-sampling error.

#### Unit VI inferential

#### Statistics

Parameter and statistic, Estimation of parameters; Point estimation, Interval Estimation, Testing of hypothesis; Null and alternative hypotheses, Type-I and Type-II Errors.

## Research Methodology

Unit I -

# Introduction to research methodology

Types of research; Descriptive vs. Analytical, Applied vs. Fundamental, Quantitative vs. Qualitative, Conceptual vs. Empirical, Some Other Types of Research 60

#### Unit II -

# **Study Designs-Observational Studies**

Epidemiological study designs; Observational studies, Descriptive studies; Case reports, Case series, Analytical studies; Case control studies, Cohort studies, Cross sectional

### **Unit III**

## **Experimental**

### Studies

Experimental studies (Interventional studies); Randomized control Trials (Clinical trials), Field trials, Community trials, Nm-Randomized Trials

# Unit IV Uses of Epidemiology

# Unit V Application of study Designs in Medical Research

# Lab Management

**Quality Concepts:** Definition of Quality, Dimensions of Quality, Basic concepts of Total Quality Management, Quality Awards. Accreditations for hospitals: Understanding the process of getting started on the road to accreditation, National and International Accreditation bodies, overview of standards- ISO (9000 & 14000 environmental standards), NABH, NABL, JCI, JACHO.

2. **Hospital Information System:** Hospital Information System Management and software applications in registration, billing, investigations, reporting, ward management and bed distribution, medical records management, materials management and inventory control, pharmacy management, dietary services, management, information processing. Security and ethical challenges.

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- 3. **Inventory Control:** Concept, various costs of inventory, Inventory techniques-ABC, SDE / VED Analysis, EOQ models. Storage: Importance and functions of storage. Location and layout of stores. Management of receipts and issue of materials from stores, Warehousing costs, Stock verification.
- 4. **Equipment Operations management:** Hospital equipment repair and maintenance, types of maintenance, job orders, equipment maintenance log books, AMCS, outsourcing of maintenance services, quality and reliability, concept of failure, equipment history and documents, replacement policy, calibration tests, spare parts stocking techniques and polices
- 5. **Biomedical Waste Management:** Meaning, Categories of Biomedical Wastes, Colour code practices, Segregation, Treatment of biomedical waste-Incineration and its importance. Standards for waste autoclaving, microwaving. Packaging

#### Reference:

- 1. K.R.Sundaram, S.N.Dwivedi and V Sreenivas (2010), Medical statistics, principles and methods, BI Publications Pvt Ltd, New Delhi
- 2. NSN Rao and NS Murthy (2008), Applied Statistics in Health Sciences, Second Edition, Jaypee Brothers Medical Publishers (P) Ltd.
- 3. J.V.Dixit and L.B.Suryavanshi (1996), Principles and practice of biostatistics, First Edition, M/S Banarsidas Bhanot Publishers.
- 4. GetuDegu and Fasil Tessema (2005), Biostatistics, Ethiopia Public Health Training Initiative.
- 5. Essentials of Community Medicine for Allied Health Sciences, JSS University Publications, 20.
- 6. Park K. Park's Textbook of Preventive and Social Medicine. 23rd ed. Jabalpur: Banarsidas Bhanot Publishers, 2015. p.135-141.
- 7. Suryakantha. Textbook of Community medicine with recent advances. 4th edition.
- 8. Bhalwar R. Textbook of Public Health and Community Medicine.2nd Edition. Pune, Department of Community Medicine AFMC, 2012.

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Course Code	Course Category	Paper Title	Credits	per week	Evaluation
				WCCK	76 LD a a a

			L	Т	P	Internal	External	Total
Core	Endoscopy OT Administration; design & Documentation	4	3	1		20	80	100

# ENDOSCOPY OT ADMINISTRATION, DESGIN & DOUCMENTATION

## **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Classify various diagnostic and therapeutic endoscopic and colonoscopic procedures	Remember
Prepare endoscopic room for the procedure	Understand
Identify the instruments and equipments used for various endoscopic procedures	Apply
Follow standard precaution and waste management protocols in endoscopy room	Analyze
Monitor the patient in recovery room	Evaluate
Maintain clean and sterile environment in endocopic suite along with sterilisation of the endoscopy and colonoscopy	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome: The student will learn the endoscopic procedure to assist the clinicians for to assist the clinicians.

For procedure preparations.

# **UNIT-I**

Organizationofhospital-Organizationofendoscopyrooms—singleandmultiple theatreunits,

Electiveandemergencyendoscopies, ambulatory surgery.

Admission and transfer procedure, maintenance of operativerecords.

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Communicationandhealthcareprovider—patientrelationship,methodsofeffective communication,attendingskills,rapportbuildingskills,empathyskills,barriersto effective communication management, need for scientific management, delega decisionmaking

#### **UNIT-III**

Supervision —Techniques
Assignments — Individual and teamfunction

#### **UNIT-IV**

Humanrelations, public relations, planning of courses block. Ethical and legalissues in operation the atream danes the sia.

**Practical:** - Organizationofhospital-Organizationofendoscopyrooms—singleandmultiple theatreunits,- Electiveandemergencyendoscopies, ambulatory surgery.

- 1. Admission and transfer procedure, maintenance of operativerecords.
- 2. Communicationandhealthcareprovider—patientrelationship,methodsofeffective communication,attendingskills,rapportbuildingskills,empathyskills,barriersto effective communication management, need for scientific management, delega decisionmaking
- 3. Supervision —Techniques
- 4. Assignments Individual and teamfunction
- 5. Humanrelations, public relations, planning of courses block.
- 6. Ethicalandlegalissuesinoperationtheatreandanesthesia.

#### Reference:

- 1.Handbook of healthcare quality & patient safety- Girdhar J Gyani & Alexander Thomas 2<sup>nd</sup> edition- 2017
- 2.Total quality management in the healthcare industry: An efficient guide for healthcare management- Balasubramanian Mahadevan 2022
- 3.Step by step Quality Hospital Care- Farooq Jan- 1st edition 2013
- 4. "Endoscopy: The Fundamentals" by Philip H. Gordon and Brian E. Lacy:

MEDICO LEGAL & RECORD KEEPING

Course Code Category Paper Title Credits per Evaluation week Evaluation

			L	T	P	Internal	External	Total
Core	Medico Legal & Record Keeping	4	3	1	-	20	80	100

#### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
To have a basic knowledge of biostatistics and its applications in medicine	Remember
To know various types of data presentation and data summarization in Medical field	Understand
To have overview of data analysis and sampling techniques	Apply
To understand various study designs in Medical field	Analyze
To know applications of various study designs in Medical Research	Evaluate
	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome: The student will learn basic of medico legal cases in procedure room

# **UNIT-I**

Law &medicine, Doctor and MLC, Fear of MLC, Medico-legal case, Receiving a MLC,

# **UNIT-II**

Procedure of registering a MLC, Time limit for registering a MLC, Definition of injury and hurt, Grievous hurt, Registration and reporting, Reporting of medico – legal case

# **UNIT-III**

Examination of MLC patient, preparation of MLC record, Description of injuries and investigation, Treatment of medico-legal cases, Transfer of MLC's, Procedure of dying declaration,

**UNIT-IV** 

Interpret medic	cal orders/repor	ts.			
Data entry and	management o	n electronic health record	l system.		
		Professionalism ar	d values		
	Course	_		Contact	
Course Code	Category	Paper Title	Credits	per week	Evaluation

			L	Т	P	Internal	External	Total
Core	Professionalism and values	4	3	1	-	20	80	100

## **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Recall key principles of professionalism and ethical values in a professional context.	Remember
Comprehend the importance of maintaining professional behavior and upholding ethical standards.	Understand
Demonstrate the ability to apply professional standards and values in real- life situations.	Apply
Analyze ethical dilemmas and make informed decisions based on professional values.	Analyze
Assess personal and organizational practices against professional standards and values.	Evaluate
Develop strategies to foster a culture of professionalism and ethical values in the workplace.	Create

Taxonomy: Remember, Understand, Apply, Analyze, Evaluate, Create

# Learning Outcome

On completion of this course, the students will be able to do the following:

1. Understand the importance of professionalism and ethical behavior in the workplace.

Demonstrate professionalism through effective communication, punctuality, and respect for colleagues and clients.

Apply ethical principles and values to make informed decisions and solve problems.

Foster a positive work environment by upholding professional standards and promoting integrity and trust.

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# UNIT I

Professional values – Integrity, Objectivity, Professional competence and due care, confidentiality

# UNIT II

Personal values - ethical or moral values

# UNIT III

Attitude and behavior – professional behavior, treating people equally

# UNIT IV

Code of conduct, professional accountability and responsibility, misconduct

# **UNIT V**

Differences between professions and importance of team efforts Cultural issues in the healthcare environment

# Suggested Readings

- 1. R. R. Gaur, R. Sangal, G.P. Bagaria, 2009, a Foundation Course in Value Education.
- 2. E.F. Schumacher, 1973, Small is Beautiful: A study of Economics as if people mattered, Blond & Briggs, Britain.
- 3. A. Nagraj, 1998, Jeevan VidyaekParichay, Divya Path Sansthan, Amarkantak.
- 4. P.L.Dhar, R.R.Gaur, 1990, Science and Humanism, Common wealth Publishers.
- 5. A.N. Tripathy, 2003, Human Values, New Age International Publishers
- E G Seebauer Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers, Oxford University Press
- 7. B. P. Banerjee, 2005, Foundations of Ethics and Management, Excel Books.

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# DISCIPLINE SPECIFIC ELECTIVE

# HOSPITAL MANAGEMENT

Course Code	Course	Paper Title	Credits		onta per weel		I	Evaluation	
Course Code	Category	raper Title	Credits	L	Т	P	Internal	External	Total
	Core	Hospital Management	3	3	-	-	20	80	100

# **Course Outcomes**

After completing this course, the student will be able to:

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CO Statement	Taxonomy
Describes the Ability to use disciplines and concepts required in formulating, implementing and evaluating strategic choices in health care	Remember
Discuss the Knowledge of key options in the policy, planning and financing of health care services	Understand
Demonstrate the Understanding of the diversity of international health policies	Apply
Define International and comparative views on solutions and best practices	Analyze
Revise the Practical experience in managerial issues	Evaluate
Follow the skills required for Long-run orientation in problem analysis and solving	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

## Learning Objective

- 1. To provide an environment that enables students to benefit and learn nuances of Hospital Management from their collective learning experiences.
- 2. To offer opportunities to develop the ability to think analytically and build capacity for independent learning.

#### UNIT-I

**Quality Concepts:** Definition of Quality, Dimensions of Quality, Basic concepts of Total Quality Management, Quality Awards. Accreditations for hospitals: Understanding the process of getting started on the road to accreditation, National and International Accreditation bodies, overview of standards- ISO (9000 & 14000 environmental standards), NABH, NABL, JCI, JACHO.

## **UNIT-II**

**Hospital Information System:** Hospital Information System Management and software applications in registration, billing, investigations, reporting, ward management and bed distribution, medical records management, materials management and inventory control, pharmacy management, dietary services, management, information processing. Security and ethical challenges.

#### UNIT-III

Inventory Control: Concept, various costs of inventory, Inventory techniques-ABC, SDE/VED Analysis, EOQ models. Storage: Importance and functions of storage. Location and layout of stores. Management of receipts and issue of materials from stores, Warehousing costs, Stock verification.

**Operations management:** Hospital equipment repair and maintenance, types of maintenance, job orders, equipment maintenance log books, AMCS, outsourcing of maintenance services, quality and reliability, concept of failure, equipment history and documents, replacement policy, calibration tests, spare parts stocking techniques and polices

## **UNIT-V**

**Biomedical Waste Management:** Meaning, Categories of Biomedical Wastes, Colour code practices, Segregation, Treatment of biomedical waste-Incineration and its importance. Standards for waste autoclaving, microwaving. Packaging, Transportation & Disposal of biomedical wastes.

#### Reference books:

- 1. Hospital and patient care management Dr Vidhya Srinivasan & Dr Akshay Ch. Deka 2022
- 2. Hospital management & administration BV Subrahmanyam 2018
- 3. Hospital management- Manisha Saxena volume 3 2018
- 4.Hospital management Ashvini Arun Vora 1st edition 2018

W Abre

# BASICS OF CLINICAL SKILL LEARNING

Course Code	Course Category	Paper Title	Credits	Contact per week			Evaluation		
				L	Т	P	Internal	External	Total
	Core	Basics of clinical Skill Learning	3	3	-	-	20	80	100

## **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describes the After successful accomplishment of the course, the students would be able to Measure Vital Signs	Remember
Discuss the Do basic physical Examination of the patients, NG tube basics, Administration of Medicines	Understand
Demonstrate the students will learn about Asepsis and the Cleanliness related to asepsis and on mobility of the patients.	Apply
Define the They will also learn on the Basics of Nasal-Gastric Tube	Analyze
Revise the Also they will know about clean lines in the Asepsis	Evaluate
Follow the skills required for They will also learn on the Basics of Nasal-Gastric Tube.	Create
	Describes the After successful accomplishment of the course, the students would be able to Measure Vital Signs  Discuss the Do basic physical Examination of the patients, NG tube basics, Administration of Medicines  Demonstrate the students will learn about Asepsis and the Cleanliness related to asepsis and on mobility of the patients.  Define the They will also learn on the Basics of Nasal-Gastric Tube  Revise the Also they will know about clean lines in the Asepsis  Follow the skills required for They will also learn on the Basics of Nasal-

Taxonomy: Receive, Respond, Value, Organize, Characterize

# Learning Outcome

- 1. To Understand and the basic ideas on how to check for Vital Signs of the Patient
- 2. They will also learn on the Basics of Nasal-Gastric Tube.
- 3. This course the student will learn how to handle the patients and their positioning

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**MEASURINGVITALSIGNS:** Temperature: Axillaries Temperature, Pulse: Sites of pulse, Measurement, Respiratory, Blood Pressure, Pain: Pain Scale

# **UNIT-II**

**PHYSICAL EXAMINATION:** Observation, Auscultation (Chest), Palpation, Percussion, History Taking.

#### UNIT-III

**FEEDING: ENTRAL FEEDINGNG TUBE:** Measurement, Procedure, Care, Removal of Nasal-Gastric Tube, Nasal-Gastric Tube Feeding, and Parenteral Nutrition

#### UNIT- IV

ASEPSIS: Hand wash Techniques, (Medical, Surgical) Universal Precaution, Protecting Equipment's: Using Sterile Gloves, opening a Sterile package and Establishing a Sterile Field, Sterile Dressing Changes, Surgical Attire, Wound Dressing, Suture Removal, Cleaning and Application of Sterile Dressing, Wearing and Removal of personal protective Equipment

## UNIT- V

**MOBILITYANDSUPPORT:** Moving and positioning, range of Motion exercises (Active & Passive) Assisting for Transfer, Application of Restraints.

## Reference books:

- 1.Basic surgical skills and techniques Sudhir Kumar -3<sup>rd</sup> edition 2018
- 2.Essentials of clinical diagnosis Sunil K Sen-9<sup>th</sup> edition 2019
- 3.Manual of clinical methods P.S.Shankar 4<sup>th</sup> edition 2017
- 4.Communication skills in clinical practice KR Sethuraman- 2<sup>nd</sup> edition 2018

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# SKILL ENHANCEMENT COURSE

# BASIC AND ADVANCE LIFE SUPPORT

Course Code	Course Category	Paper Title	Credits	Contact per week			Evaluation		
				L	Т	P	Internal	External	Total
	Skill Enhanceme nt Course	Basic and Advance Life Support	2	2	1	1	20	80	100

#### **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Demonstrate how to open a casualty's airway and check for breathing	Remember
Demonstrate how to place an unresponsive casualty in the recovery position	Understand
Perform Cardiopulmonary Resuscitation using a manikin	Apply
Identify safety considerations when using an automated external defibrillator (AED)	Analyze
Be able to safely use an automated external defibrillator	Evaluate
Follow the skills need to commence Cardiopulmonary Resuscitation (CPR).	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

# Course Objective

- 1. Demonstrate how to open a casualty's airway and check for breathing
- 2. Demonstrate how to place an unresponsive casualty in the recovery position
- 3. Perform Cardiopulmonary Resuscitation using a manikin
- 4. Identify safety considerations when using an automated external defibrillator (AED)
- 5. Be able to safely use an automated external defibrillator

# Learning Outcomes

- 1. Recognize the need to commence Cardiopulmonary Resuscitation (CPR)
- 2. Assess a casualty's level of consciousness

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Review of anatomy and physiology of blood and cardio vascular system, Assessment-History and Physical assessment Etiology, Path physiology, clinical manifestations,

#### **UNIT-II**

# Diagnosis, treatment modalities of:

Vascular system

Heart Congenital and acquired - Rheumatic Heart diseases

#### **UNIT-III**

# Diagnosis, treatment modalities of:

Infective Endocarditic, congenital heart Diseases
Cardiac emergencies and arrest
Cardio Pulmonary Resuscitation (CPR)
Drugs used in treatment of blood and cardio vascular disorders

## UNIT- IV

## **Basic Life Support**

- Airway Management
- Anaphylaxis
- Approach to Shock

Initial Management of Shock

#### UNIT- V

# **Basic Life Support**

- Approach to Syncope
- Approach to Restless Patient
- Approach to Pediatric Patients
- Safe transfer of patients to definitive care areas
- Approach to Trauma Patients

#### Reference books:

- 1.Basic Life Support-Manual AHA- 2016
- 2. Advance Emergency Life Support Protocols Gireesh Kumar KP 1<sup>st</sup> edition 2015
- 3.First aid for nurses TK Indrani- 2<sup>nd</sup> edition 2018
- 4.ACLS Study Guide Barbara Aehlert 6<sup>th</sup> edition 2022

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# ORGANIZATIONAL BEHAVIOUR

Course Code	Course Category	Paper Title	Credits	Contact per week			Evaluation		
				L	Т	P	Internal	External	Total
	Skill Enhanceme nt Course	Organizational Behaviors	2	2	-	•	20	80	100

## **Course Outcomes**

After completing this course, the student will be able to:

CO Statement	Taxonomy
Describes the organizational behavior, types, importance& Fundamental concepts of OB	Remember
Discuss the individual behaviour related to motivation and rewards &Characteristics of motives.	Understand
Demonstrate the processes used in developing communication &Impact of communication skills on Organizational design	Apply
Define the management of resolving destructive conflicts &Strategies for encouraging constructive conflict.	Analyze
Revise the group dynamics, Models and theories of Leadership Styles.	Evaluate
Follow the skills required for working in groups (team building) &Importance of Leadership Styles.	Create

Taxonomy: Receive, Respond, Value, Organize, Characterize

Learning Outcome

- 1. To analyze and compare different models used to explain individual behaviour related to motivation and rewards.
- To identify the processes used in developing communication and resolving conflicts. to explain group dynamics and demonstrate skills required for working in groups (team building)

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OrganizationalBehavior-Definition-Importance -HistoricalBackground-FundamentalconceptsofOB-21stCenturycorporate-DifferentmodelsofOBi.e.autocratic,custodial, Supportive

#### **UNIT-II**

<u>Organization Structure and Design</u>- Authority and Responsibility Relationships - DelegationofAuthorityandDecentralization-InterdepartmentalCoordination-Emerging Trends in Corporate Structure, Strategy and Culture - Impact of TechnologyonOrganizationaldesign-Mechanisticvs AdoptiveStructures – FormalandInformalOrganization

#### **UNIT-III**

<u>Perception Process</u> - Nature & Importance - Perceptual Selectivity - Perceptual Organization - Social Perception - Impression Management. Learning-ProcessofLearning-PrinciplesofLearning-OrganizationalRewardSystems - Behavioral Management

#### **UNIT-IV**

<u>Motivation - Motives - Characteristics</u> - Classification of motives - Primary Motives - Secondary motives - Morale - Definition and relationship with productivity - Morale Indicators

## **UNIT V**

<u>Leadership - Definition</u> - Importance -Leadership Styles - Models and Theories of Leadership Styles.

<u>Conflict Management - Traditional vis-a-vis Modern view of conflict - Constructive and Destructive conflict - Conflict Process - Strategies for encouraging constructive conflict - Strategies for resolving destructive conflict</u>

## **Reference Books:**

- 1: Human Relations & Organizational Behaviour R.S.Dwivedi 2007
- 2:Organizational Behaviour Uma Sekaran 2005
- 3: Margie Lovett Scott, Faith Prather. Global health systems comparing strategies for delivering health services. Joney& Bartlett learning, 2014
- 4: Human Behaviour at Work Keith Davis 2004

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#### SEMESTER - VII & VIII

## INTERNSHIP

Course Code	Course	Paper Title	Evaluation				
Course Code	Category	raper Title	Internal	External			
	Core	INTERNSHIP	20	80			
	Core	INTERNSHIP	20	80			

### **Guidelines:**

- The internship shall commence after the student has completed and passed all subjects up to VI semesters.
- 2. The internship is compulsory.
- 3. The duration of the internship shall be one year.
- 4. The degree of Bachelor in Allied Health Sciences shall be awarded after the satisfactory completion of the internship.

#### **Evaluation of Internees:**

**Formative Evaluation:** Day to day assessment of the internees during their internship postings should be done by the Head of the Department/Faculty assigned.

The objective is that all the interns must acquire necessary minimum skills required for carrying out day to day professional work competently. This can be achieved by maintaining Records /Log Book by all internees. This will not only provide a demonstrable evidence of the processes of training but more importantly of the internee's own acquisition of competence as related to performance.

**Summative Evaluation:** It shall be based on the observation of the Sr. Technical staff / Faculty of the department concerned and Record / Log book maintained by the interns.

Based on these two evaluations, the Head of the Department shall issue certificate of satisfactory completion of training, following which the university shall award the degree or declare him/her eligible for it. To implement the project work uniformly for all the specialties in view of the curriculum and training to be acceptable internationally and the students to get opportunity for higher studies and employment.

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