Course Information:

School/ Department:	Glocal College of Paramedical Science & Research Centre
Programme:	BRIT
Course Tile:	Human Anatomy
Course Code:	MRT-101
Course Level (UG/PG)	UG
Credits	4- L 0- T 1-P.
Prerequisite	No
Year/Semester	1st

Course Objectives: Anatomy focuses on the structural organization of the human body and the standard naming and definition of the physical properties.

Course Outcomes: 1. Student should be able to identify and locate all the structures of body.
2. Can mark the topography of living anatomy by dissection.
3. Identify the organs and tissue by observing under microscope.
4. Should be able to show anatomical relations of different organs and body parts.
5. Knowledge of histology and embryology.

Teaching Methodology:

Methodology	Mention Appropriate Methods (Yes/No)
Explanations by the Instructor	**Yes**
Group/Pair Work	**Yes**
Class Discussion	**Yes**
Assignment/s	**Yes**
Viva Voice	**Yes**
Audio/video Class	**Yes**
Practical/ Case Study/Diary	**Yes**
Presentations	**Yes**
Hospital Posting	**No**

COURSE CONTENT

No	Description	Weightage (%)
1	**Introduction Human body as a whole:** Definition of anatomy and its divisions, Terms of location, positions and planes, Cell and its organelles, Epithelium-definition, classification, describe with examples, function, Glands-classification, describe serous & mucous glands with examples, Basic tissues – classification with examples.	10
2	**Locomotion and Support** ***Cartilage*** – types with example & histology, ***Bone*** – Classification, names of bone cells, parts of long bone, microscopy of compact bone, names of bones, vertebral column, inter vertebral disc, fontanelles of Fetal skull. ***Joints*** – Classification of joints with examples, synovial joint (in detail for radiology), ***Muscular system-*** Classification of muscular tissue & histology, Names of muscles of the body.	13
3	**Cardiovascular System** Heart-size, location, chambers, exterior & interior, Blood supply of heart, Systemic & pulmonary circulation, Branches of aorta, common carotid artery, subclavian artery, axillary artery, brachial, artery, superficial palmar arch, femoral artery, internal iliac artery, Peripheral pulse, Inferior venacava, portal vein, portosystemic anastomosis, Great saphenous vein, Dural venous sinuses, Lymphatic systemcisterna chyli & thoracic duct, Histology of lymphatic tissues, Names of regional lymphatics, axillary and inguinal lymph nodes in brief.	15
4	**Gastro-intestinal System** Parts of GIT, Oral cavity (lip, tongue (with histology), tonsil, dentition, pharynx, and salivary glands Waldeyer's ring), Oesophagus, stomach, small and large intestine, liver, gall bladder, peritoneum, pancreas and Radiographs of abdomen.	12
5	**Respiratory System** Parts of RS, nose, nasal cavity, larynx, trachea, lungs, bronchopulmonary segments, Histology of trachea, lung and pleura, Names of paranasal air sinuses.	10
6	**Urinary System** Kidney, ureter, urinary bladder, male and female urethra, Histology of kidney, ureter and urinary bladder.	7

7	**Reproductive System** Parts of male reproductive system, testis, vas deferens, epididymis, prostate (gross & histology), Parts of female reproductive system, uterus, fallopian tubes, ovary (gross & histology), Mammary gland-gross. **Endocrine Glands:** Names of all endocrine glands in detail on pituitary gland, thyroid gland, parathyroid gland, suprarenal glad (gross & histology).	13
8	**Nervous System** Neuron, Classification of NS, Cerebrum, cerebellum, midbrain, pons, medulla oblongata, spinal cord with spinal nerve (gross & histology), Meninges, Ventricles & cerebrospinal fluid, Names of basal nuclei, Blood supply of brain, Cranial nerves, Sympathetic trunk & names of parasympathetic ganglia. ***Skin:*** Skin-histology, Appendages of skin, ***Eye:*** Parts of eye & lachrymal apparatus, Extra-ocular muscles & nerve supply, ***Ear:*** parts of ear- external, middle and inner ear and contents	15
9	**Embryology** Spermatogenesis & oogenesis, Ovulation, Fertilization, Fetal circulation, Placenta.	5

Lecture Plan

Unit Number	Unit Title	Number of Lectures
1	**Introduction Human body as a whole**	7
2	**Locomotion and Support**	10
3	**Cardiovascular System**	10
4	**Gastro-intestinal System**	10
5	**Respiratory System**	8

6	**Urinary System**		8
7	**Reproductive System**		10
8	**Nervous System**		15
9	**Embryology**		7

Practicals:

1. Major organs through models and permanent slides.
2. Parts of circulatory system from models.
3. Parts of respiratory system from models.
4. Digestive system from models.
5. Excretory system from models.
6 Nervous system from models.
7. Structure of eye and ear
8. Structural differences between skeletal, smooth and cardiac muscles.
9. Various bones
10. Various joints
11. Various parts of male & female reproductive system from models
Lab Title:

Credit Hours: 2/week

Literature/Reference: Lab Manual

Evaluation Scheme

	External	Internal	Total

Assessment (theory)	70	30	100
Evaluation of Practical/Dissertations	35	15	50

Internal Evaluation of Theory	Class Test Class Test(2 best out of 3)	Assignment	Attendance	Total
	20	5	5	30

Textbooks, Reference, Supplementary Materials

1. William Davis, *Understanding Human Anatomy and Physiology*, McGraw Hill
2. Chaurasia, *A Text Book of Anatomy*
3. Ranganathan, T.S., *A Text Book of Human Anatomy*
4 . Fattana, *Human Anatomy*, (Description and Applied), Saunder's & C P Prism Publishers, Bangalore
5. Ester. M. Grishcimer, *Physiology & Anatomy with Practical Considerations,* J.P. Lippin Cott. Philadelphia

Cos\ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓								✓			
CO2									✓			
CO3												
CO4												
CO5												

Departmental Quality Assurance Committee Approval			
No.	Name	Digital Signature	Date
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Course Information:

Course Objectives: Human Physiology introduces the functionality of the organ system of body. The complexity of human body is explored in this course.

Course Outcomes: 1.Should be able to examine proper functioning of human body.

School/ Department:	Glocal College of Paramedical Science & Research Centre
Programme:	BRIT
Course Tile:	Human Physiology
Course Code:	MRT-102
Course Level (UG/PG)	UG
Credits	4- L 0- T 1-P.
Prerequisite	No
Year/Semester	1st

2. Knowledge of major systems of the human body which includes, Circulatory system, Digestive system, Endocrine system, Respiratory system, immune system, reproductive system.
3. Awareness of various clinical disorders due to malfunctioning of organ systems.
4. Practical knowledge to do blood grouping, typing and cross matching.
5. Should be able to demonstrate normal values of blood cells, blood volume, pH and regulation of blood volume body fluid.

Teaching Methodology:

Methodology	Mention Appropriate Methods (Yes/No)
Explanations by the Instructor	**Yes**
Group/Pair Work	**Yes**
Class Discussion	**Yes**
Assignment/s	**Yes**
Viva Voice	**Yes**
Audio/video Class	**Yes**
Practical/ Case Study/Diary	**Yes**
Presentations	**Yes**
Hospital Posting	**No**

COURSE CONTENT

No	Description	Weightage (%)
1	**Cell physiology**: Structure, membrane, transport across cell	5

	membrane, Active, Passive, Organization of the Body, Body Composition, Body Fluid Volumes and its measurement, Diffusion, Osmosis, Tonicity, Homeostasis	
2	**Blood**-composition, function, cellular component & their function, haemoglobin & anemia, coagulation Lymphatic system-Composition & function of lymph, lymphatic tissue, Immunity with the role of thymus Red blood cells- Erythropoiesis, stages of differentiation function, count physiological Variation. Haemoglobin - Structure, function, concentration physiological variation. Methods of Estimation of Hb, White blood cell- Production, function, life span, count, differential count. Platelets- Origin, normal count, morphology functions. Plasma Proteins- Production, concentration, types, albumin, globulin, fibrinogen, Prothrombin functions. Haemostasis & Blood coagulation. Haemostasis – Definition, normal haemostasis, clotting factors, mechanism of clotting disorders of clotting factors. Blood groups-A, B, O system, Rh system, Blood grouping & typing, Cross-matching, Rh system-Rh factor, Rh in Cross-matching, Blood transfusion – Indication, universal donor and recipient concept. Selection criteria of a blood donor. Transfusion Anticoagulant – Classification, Examples and uses.	25
3	**Cardiovascular system**-general arrange, heart, arteries, veins and capillaries, heart structure and function, cardiac cycle, heart sounds, heart rate, blood pressure, mechanism of circulation, definition of hypertension & shock	15
4	**Respiratory system**: parts of respiratory system, mechanism of respiration, pulmonary function, pulmonary circulation, lungs volume, Gas transport between lungs and tissues, Definition of hypoxia, dyspnoea, cyanosis, asphyxia and obstructive airways diseases	10
5	**Gastrointestinal physiology**: Organs of GIT and their structure & function, secretion, digestion, absorption and assimilation, gastrointestinal hormones, physiology of digestion of carbohydrates, proteins & lipids, Structure & function of liver, spleen, gall bladder &	15

	pancreas, Jaundice, Cirrhosis & Pancreatitis.	
6	**Nervous system**- general organization of CNS, function of important structure and spinal cord, neuron, nerve impulse, type of nerves according to function, Autonomic nervous system organization & function, Special senses-general organization & functions.	10
7	**Organs of Excretory System**: Kidneys, Nephron, Mechanism of Excretion, Urine formation (Glomerular filtration and Tubular reabsorption) , Electrolytes: their balances and imbalances Introduction of acidosis and alkalosis. **Fundamentals of different Organ Systems:** - Reproductive System - Endocrine System - Lymphatic System	20

Lecture Plan

Unit Number	Unit Title	Number of Lectures
1	**Cell physiology**	10
2	**Blood**	15
3	**Cardiovascular system**	15
4	**Respiratory system**	15
5	**Gastrointestinal physiology**	15
6	**Nervous system**	7
7	**Organs of Excretory System**	15

Practical:

1. Haemoglobinometry
2. White Blood Cell Count
3 Red Blood Count
4. Determination of Blood Groups

5. Leishman's staining and Differential WBC count
6. Determination of packed cell Volume
7. Erythrocyte sedimentation rate [ESR]
8. Calculation of blood indices
9. Determination of Clotting Time, Bleeding Time
10. Blood pressure Recording
11. Auscultation for Heart Sounds
12. Artificial Respiration
13. Determination of vital capacity

Credit Hours: 2/week

Literature/Reference: Lab Manual

Evaluation

	External	Internal	Total
Assessment (theory)	70	30	100
Evaluation of Practical/Dissertations	35	15	50

Internal Evaluation of Theory	Class Test Class Test(2 best out of 3)	Assignment	Attendance	Total
	20	5	5	30

Textbooks, Reference, Supplementary Materials

1. Jain, A.K., *Practical Handbook of Human Physiology*
2 . Nageshwari, *Practical Workbook of Human Physiology*
3. Gupta, *Medical Physiology Made Easy*
4. Guyton, Arthur, *Text Book of Physiology*, Prism Publishers
5. Chatterjee, C C, *Human Physiology*, Medical Allied Agency
6. A.K Jain, *Human Physiology*

Cos\ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓								✓			
CO2	✓								✓			
CO3												
CO4												
CO5												

Departmental Quality Assurance Committee Approval			
No.	Name	Digital Signature	Date
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Course Information:

School/ Department:	Glocal College of Paramedical Science & Research Centre
Programme:	BRIT
Course Tile:	Medical Biochemistry
Course Code:	MRT-103
Course Level (UG/PG)	UG
Credits	4- L 0- T 1-P.
Prerequisite	No
Year/Semester	1st

Course Objectives: The objective of this subject is to provide knowledge to understand the fundamental chemical principles that govern complex biological systems. To introduce the close relationship which emphasize that, life depends on biochemical reactions and chemical changes.

Course Outcomes: 1. Knowledge about identification of the structural elements of different biomolecules and their basic features.
2. Demonstration and applicability of the metabolic role of biomolecules and metabolites in physiological and / or pathological processes.
3. Knowledge regarding specimen collection, transportation and storage.
4. Information about identification and handling of different laboratory apparatus, glassware, instruments and reagents and their use in sample processing and diagnosis.
5. Knowledge of nutritional importance of lipids, carbohydrates, proteins and vitamins. Estimation of different biomarkers, organ function tests and their importance in diagnostic field.

Teaching Methodology:

Methodology	Mention Appropriate Methods (Yes/No)
Explanations by the Instructor	**Yes**
Group/Pair Work	**Yes**
Class Discussion	**Yes**
Assignment/s	**Yes**
Viva Voice	**Yes**
Audio/video Class	**Yes**
Practical/ Case Study/Diary	**Yes**
Presentations	**Yes**
Hospital Posting	**No**

COURSE CONTENT

No	Description	Weightage (%)
1	**Introduction**: Fundamental and Clinical Biochemistry, First aid in laboratory accidents. Principle, working, care & maintenance of Weighing balance, hotplate, centrifuges, incubator, hot air oven, colorimeter, spectrophotometer, pH meter.	12
2	**Types of Equipment & Glasswares:** Pipettes- different types (Graduated, volumetric, Pasteur, Automatic etc.), Calibration of glass pipettes, Burettes, Beakers, Petri dishes, depression plates. Flasks - different types) Volumetric, round bottomed, Erlenmeyer conical etc.). Funnels – different types (Conical, Buchner etc.) Bottles: Reagent bottles – graduated and common, Wash bottles – different types, Specimen bottles etc.	15
3	**Preparation of various solutions and measurement units:** Preparation of solution and reagents, normal solution, molar solutions, percent solution, buffer solution, dilutions, w/v,v/v, concepts of acid and base, units of measurement: SI unit, reference range, conversion factor, units for measurement of enzymes, protein, osmolarity, drugs, hormones, vitamins.	16
4	**Carbohydrates:** Structure, Classification and their function in biological system. **Proteins**: Classification, Primary, secondary and tertiary structure and functions of protein. **Amino acids**: classification, Structure, properties and biological functions. **Lipids:** Classification of lipids, Classification of fatty acids, their biological functions. **Enzymes**: Definition, classification of enzyme, units for measuring enzyme activity. **Nucleic acids:** Structure, function and types of DNA and RNA. Nucleotides, Nucleosides, Nitrogen bases, and role of Nucleic acid.	17
5	**Vitamins:** classification, function and disease associated with vitamins. Role of Minerals and ions: Calcium, Iron, Iodine, Zinc, Phosphorus, Copper, Potassium, Zinc.	10
6	**Quality control:** Accuracy, Precision, Specificity, Sensitivity.	15

	Limits of error allowable in laboratory, Percentage error, Normal values and Interpretations, pH Regulation, Disturbance in acid Base Balance, Metabolic acidosis & alkalosis, Respiratory acidosis & alkalosis, Respiratory alkalosis, Basic Principles and estimation of Blood Gases and pH, Basic principles and estimation of Electrolytes, Nutritional importance of lipids, carbohydrates, proteins and Vitamins.	
7	**Maintenance of Lab Glassware and Apparatus:** Glass and plastic ware in Laboratory, use of glass: significance of borosilicate glassware and cleaning of glassware, different cleaning solutions of glassware and cleaning of plastic ware, different cleaning solutions.	15

Lecture Plan

Unit Number	Unit Title	Number of Lectures
1	**Introduction**	09
2	**Types of Equipment & Glasswares**	12
3	**Preparation of various solutions and measurement units**	15
4	**Carbohydrate, Proteins, amino acids, Lipids, Enzymes, Nucleic Acids**	15
5	**Vitamins**	7
6	**Quality Control**	10
7	**Maintenance of Lab Glassware and Apparatus**	15

Practical:

1. Analysis of Normal Urine
2. Liver Function tests
3. Lipid Profile
4. Renal Function test
5. Blood gas and Electrolytes
6. Demonstration of Glucometer with strips
7. Estimation of Carbohydrates

Credit Hours: 2/week

Literature/Reference: Lab Manual

Evaluation Scheme

	External	Internal	Total
Assessment (theory)	70	30	100
Evaluation of Practical/Dissertations	35	15	50

Internal Evaluation of Theory	Class Test(2 best out of 3)	Assignment	Attendance	Total
	20	5	5	30

Textbooks, Reference, Supplementary Materials

1. Varley, *Clinical Chemistry*
2. Teitz, *Clinical Chemistry*
3. Kaplan, *Clinical Chemistry*
4. Ramakrishna S, Prasanna KG, Rajna, *Text Book of Medical Biochemistry*, Orient Longman
5. Vasudevan DM & Sreekumari S, *Text Book of Biochemistry for Medical Students*.
6. Das, Debajyothi, Biochemistry, Academic, Publishers, Calcutta.
7. Chatterjee, *A Text book of Medical Biochemistry*
8. U. Satyanarayan, *Medical Biochemistry*
9. Satyanarayan, U., *Medical Biochemistry*

Cos\ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓								✓			
CO2	✓								✓			
CO3												
CO4												
CO5												

Departmental Quality Assurance Committee Approval			
No.	Name	Digital Signature	Date
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Course Information:

Course Objectives: This subject introduces the basic fundamentals of Radio-imaging. Working mechanism and principles of X-ray machine is explained and basic knowledge of radiation physics is described.

Course Outcomes: 1. Student shall be able to explain basic working mechanism of X-ray production, emission and interaction with matter and physical principles of Diagnostic Ultrasound Piezoelectric Effect.

School/ Department:	Glocal College of Paramedical Science & Research Centre
Programme:	BRIT
Course Tile:	Fundamental of Medical Imaging & Basics of Radiation Physics
Course Code:	MRT-104
Course Level (UG/PG)	UG
Credits	4- L 0- T 0-P
Prerequisite	No
Year/Semester	1st

2. Knowledge of dark room design, construction, entrance, illumination.
3. Knowledge of X-ray room and its layout.
4. Should be able to demonstrate knowledge of radiation physics basics.
5. Knowledge of radiographic exposure and film developing.

Teaching Methodology:

Methodology	Mention Appropriate Methods (Yes/No)
Explanations by the Instructor	**Yes**
Group/Pair Work	**Yes**
Class Discussion	**Yes**
Assignment/s	**Yes**
Viva Voice	**Yes**
Audio/video Class	**Yes**
Practical/ Case Study/Diary	**Yes**
Presentations	**Yes**
Hospital Posting	**No**

COURSE CONTENT

No	Description	Weightage (%)
1	**X-Ray machine:** X-ray Production, Emission & Interactions	10

	with matter, KVP, mAs, control panel. **X ray Tube:** components, types.	
2	**Radiographic Film**: latent Image, Intensifying Screens, Grids, Cassettes, radiograph, Radiographic Exposure, Film Developing & Processing, Radiographic Quality, characteristics curve, filters.	15
3	1. **Dark Room:** dark room design, construction, entrance, illumination, safe light, storage, cleaning and maintenance. X-Ray room Layout. 2. **Care and Maintenance of X-Ray Equipment:** General Principles Of Cleaning Routines. General Care In Use And Special Care Of Mobile equipment. Simple Test. Uses Of Spinning Top And Step Wedge, Checks On Generator Output;	10
4	**The Atom** - Definition, Thomson Atom, Bohr Atom, Atomic Structure, Electron Binding Energy, laws of radioactivity and decay schemes of different alpha, Beta, gamma ray.	15
5	**Electromagnetic Radiation-** Photon, Velocity and amplitude, Frequency and wavelength, Electromagnetic Spectrum, Inverse square law, Units and quantities of radiation, dose measurement for various diagnostic procedures,general radiation protection.	10
6	**Electricity and Magnetism-** Electrostatics, Laws of electrostatics, Coulomb's law, Electrodynamics, Ohm's laws, Alternative & Direct Current, Magnet, Classification of magnets, Magnetic laws. **Electromagnetism –** Electromagnetic Effect, Faraday's & Lenz's law of Electromagnetic Induction, Generator, Laws of Transformers.	15
7	**X-ray Imaging System-** Operating console, Autotransformers, Control of kVp, mAs, Exposure Timers, Voltage Rectification **Image Quality**- Exposure, attenuation, absorption, contrast, resolution, sharpness, noise, various factors determining image quality	15
8	**Circuits Components**- Filament Circuit, High voltage circuit, Switched, Fuses, Circuit Breakers. **Beam limiting Devices-** Cones, Cylinders, collimator, Types Filters.	10

Lecture Plan

Unit Number	Unit Title	Number of Lectures
1	**X-ray Machine**	7
2	**Radiographic Film**	7
3	**Dark Room**	10
4	**The Atom**	10
5	**EMR**	7
6	**Electricity & Magnetism**	10
7	**X-ray Imaging System**	7
8	**Circuit Components**	10

Practical:

1. X-ray tubes general features and mobile equipment.
2. Care and maintenance of X-ray equipment and image intensifier
3. To study effects of Kilo Voltage Peak (KVP) and Milli Ampere Second (MAS)
4. To check the safety of dark room.
5. To check the speed of intensifying screen.
6. To check the developing time test and function.
7. Silver recovery method

Credit Hours: 2/week

Literature/Reference: Lab Manual

Evaluation Scheme

	External	Internal	Total
Assessment (theory)	70	30	100
Evaluation of Practical/Dissertations	35	15	50

Internal Evaluation of Theory	Class Test(2 best out of 3)	Assignment	Attendance	Total
	20	5	5	30

Textbooks, Reference, Supplementary Materials

1. Garkal, Radiology for Poisoning and Applied Anatomy.
2 . Krishnamurthy, Medical Radiographic Technique and Dark Room Practice
3. Rehani, Diagnostic Imaging and Quality Assurance
4. Chesney and Chesney, Radiographic Imaging

Cos\ POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	✓											✓
CO2	✓											
CO3	✓											
CO4	✓											
CO5	✓											

Departmental Quality Assurance Committee Approval			
No.	Name		Date

		Digital Signature	
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2			

Course Information:

Course Objectives: The aim of this subject is to describe concepts of health, important public health acts, of epidemiology, diseases, types and use of epidemiology, departmental protection and radiation signage's. This subject also focuses on National Health Policy and Programs, universal immunization programme and various problems of population growth.

Course Outcomes: 1.Knowledge of Basic emergency care and first aid.

School/ Department:	Glocal College of Paramedical Science & Research Centre
Programme:	BRIT
Course Tile:	Preventive & Social Medicine
Course Code:	MRT-105
Course Level (UG/PG)	UG
Credits	4- L 0- T 1-P.
Prerequisite	No
Year/Semester	1st

2. Epidemiology, etiology, control of communicable disease like malaria, cholera, tuberculosis, leprosy, diarrhea, poliomyelitis, viral hepatitis, measles, dengue, rabies and AIDS.
3. Knowledge of nutrition and major nutritional problems, etiology, manifestations and prevention, components of RCH care.
4. Should be able to examine water, food adulteration.
5. Knowledge regarding role of regular exercise and yoga in prevention and management of various diseases.

Teaching Methodology:

Methodology	Mention Appropriate Methods (Yes/No)
Explanations by the Instructor	**Yes**
Group/Pair Work	**Yes**
Class Discussion	**Yes**
Assignment/s	**Yes**
Viva Voice	**No**
Audio/video Class	**Yes**
Practical/ Case Study/Diary	**Yes**
Presentations	**Yes**
Hospital Posting	**No**

COURSE CONTENT

No	Description	Weightage (%)
1	Definition and concepts of health, important public health acts, health problems of developed and developing countries, Epidemiology: Epidemiology, surveillance and control of community infections. Role of laboratory in community and hospital infections. Emergence of drug resistance .Methods of prevention and control– isolation of patients, quarantine & incubation periods of various infectious diseases. Management of patient's infectious diseases hospital.	20
2	National Health Policy and Programs, DOTS, National AIDS control programme, National cancer control programme, universal immunization programme. Reproductive, family planning and child health care programs. Health care by balance diet and yoga: Normal constituents of diet, various diet programs. Balance diet and factors responsible for etiology of various nutritional disorders, carcinogens in food.	20
3	Population, problems of population growth, birth rates, death rates, fertility rates, MMR.,CPR, Approaches and methods of contraception, Reproductive and child health. Hygiene and sanitation, sanitation barriers, excreta disposal.	20
4	Immunization programme, various national immunization programs and vaccine schedules, Family welfare and planning, communicable and non-communicable disease, Prophylactic immunization: Rationale of immunization, immune response and duration of immunity. Controlled studies of prophylactic vaccines and hazards, immunization. Various national immunization programs and vaccine schedules.	20
5	Role of regular exercise and yoga in prevention and management of various diseases. Health planning &management: Health planning. Planning cycle, malaria eradication and various other notional health policy and programs.	20

Lecture Plan

Unit Number	Unit Title		Number of Lectures

1	**Introduction**	10
2	**Policies**	15
3	**Social Outreach**	15
4	**Goals and working of various Organizations**	15
5	**Radiation Protection**	10

Evaluation Scheme

	External	Internal	Total
Assessment (theory)	70	30	100
Evaluation of Practical/Dissertations	35	15	50

Internal Evaluation of Theory	Class Test(2 best out of 3)	Assignment	Attendance	Total
	20	5	5	30

Textbooks, Supplementary Materials

1. Park K. Park's textbook of preventive and social medicine.
2. Leavell HR, Clark EG. Preventive Medicine for the Doctor in his Community. An Epidemiologic Approach.
3. Durrani SA, Ilic R, editors. Radon measurements by etched track detectors: applications in radiation protection, earth sciences and the environment. World scientific; 1997 Jun 9.
4. Sherer MA, Visconti PJ, Ritenour ER, Haynes K. Radiation Protection in Medical Radiography-E-Book. Elsevier Health Sciences; 2014 Mar 12.

Cos\	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12

POs												
CO1									✓			
CO2									✓			
CO3									✓			
CO4												
CO5												

Departmental Quality Assurance Committee Approval			
No.	**Name**	**Digital Signature**	**Date**
1			
2			

Course Information:

Course Objectives: The subject focuses on functional characteristics of input and output units, internet, electronic payment system and concept and version of HTML.

Course Outcomes: 1. Knowledge of computer hardware and software.
2. Should be able to demonstrate knowledge of computer networks and communication and protocols.

School/ Department:	Glocal College of Paramedical Science & Research Centre
Programme:	BRIT
Course Tile:	Basics of Computers
Course Code:	MRT-106
Course Level (UG/PG)	UG
Credits	2- L 0- T 1-P.
Prerequisite	No
Year/Semester	1st

3. Can interface concepts of internet.
4. Should be able to apply knowledge of computer science in various radiographic techniques.
5. Knowledge of electronic payment system.

Teaching Methodology:

Methodology	Mention Appropriate Methods (Yes/No)
Explanations by the Instructor	**Yes**
Group/Pair Work	**Yes**
Class Discussion	**Yes**
Assignment/s	**Yes**
Viva Voice	**Yes**
Audio/video Class	**Yes**
Practical/ Case Study/Diary	**Yes**
Presentations	**Yes**
Hospital Posting	**No**

COURSE CONTENT

No	Description	Weightage (%)

1	**Introduction and Definition of Computer:** Computer Generation, Characteristics of Computer, Advantages and Limitations of a computer, Classification of computers, Functional components of a computer system (Input, CPU, Storage and Output Unit), Types of memory (Primary and Secondary) Memory Hierarchy. Hardware: a) Input Devices- Keyboard, Mouse, Scanner, Bar Code Reader b) Output Devices – Visual Display Unit (VDU), Printers, Plotters etc. Software: Introduction, types of software with examples, Introduction to languages, Compiler, Interpreter and Assembler. Number System: Decimal, Octal, Binary and Hexadecimal Conversions, BCD, ASCII and EBCDIC Codes.	20
2	**MS – DOS:** Getting Started on DOS with Booting the System, Internal Commands: CHDIR(CD),CLS, COPY, DATE, DEL(ERASE), DIR, CHARACTER, EXIT,MKDIR(MD), REM, RENAME(REN), RMDIR(RD), TIME, TYPE, VER, VOL, External Commands: ATTRIB, CHKDSK, COMMAND, DOSKEY, EDIT, FORMAT,HELP, LABEL, MORE, REPLACE, RESTORE, SORT, TREE, UNDELETE, UNFORMAT,XCOPY. **Introduction of Internet:** History of internet, Web Browsers, Searching and Surfing, Creating an E-Mail account, sending and receiving E-Mails.	20
3	**MS Word:** Starting MS WORD, Creating and formatting a document, Changing fonts and point size, Table Creation and operations, Autocorrect, Auto text, spell Check, Word Art, Inserting objects, Page setup, Page Preview, Printing a document, Mail Merge.	20
4	**MS Excel:** Starting Excel, Work sheet, cell inserting Data into Rows/ Columns, Alignment, Text wrapping , Sorting data, Auto Sum, Use of functions, Cell Referencing form, Generating graphs, Worksheet data and charts with WORD, Creating Hyperlink to a WORD document, Page set up, Print Preview, Printing Worksheets. MS Power Point: Starting MS–Power Point, Creating a presentation using auto content Wizard, Blank Presentation, creating, saving and printing a presentation, Adding a slide to presentation, Navigating through a presentation, slide sorter, slide show, editing slides, Using Clipart, Word art gallery, Adding Transition and Animation effects, setting timings for slide show, preparing note pages, preparing audience hangouts, printing presentation documents. MS – Access: creating table and database.	20

5	**MS-POWERPOINT:** Starting MS–Power Point,, Creating a presentation using auto content Wizard, Blank Presentation, creating, saving and printing a presentation, Adding a slide to presentation, Navigating through a presentation, slide sorter, slide show, editing slides, Using Clipart, Word art gallery, Adding Transition and Animation effects, setting timings for slide show, preparing note pages, preparing audience hangouts, printing presentation documents.	20

Lecture Plan

Unit Number	Unit Title	Number of Lectures
1	**Introduction**	08
2	**MS-DOS**	10
3	**MS-Word**	10
4	**MS-Excel**	10
5	**MS-PowerPoint**	10

Practical:

1. MS-DOS
2. Microsoft Word
3. Microsoft Excel.
4. Microsoft PowerPoint.
5. Microsoft Paint.
6. Internet Surfing.
7. Net banking

Credit Hours: 2/week

Literature/Reference: Lab Manual

Evaluation Scheme

	External	Internal	Total
Assessment (theory)	70	30	100
Evaluation of Practical/Dissertations	35	15	50

Internal Evaluation of Theory	Class Test(2 best out of 3)	Assignment	Attendance	Total
	20	5	5	30

Textbooks, Reference, Supplementary Materials

1. Sinha P.K., Computer Fundamentals, BPB Publishing.
2. Bill Bruck., The Essentials Office 2000 Book, BPB Publishing.
3. Leon A. & Leon M., Introductions to Computers, Vikas Publications.
4. Peter Norton_s, Introductions to Computers, Tata McGraw Hill.
4. Price Michael, Office in Easy Steps, TMH Publication.

Cos\ POs	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
CO1	✓											
CO2	✓											
CO3												
CO4	✓											
CO5												

Departmental Quality Assurance Committee Approval			
No.	**Name**	**Digital Signature**	**Date**
1			
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