

AC- 29/03/2023

Item No-5.98



**Rayat Shikshan Sanstha's
KARMAVEER BHAURAO PATIL COLLEGE VASHI
(AUTONOMOUS COLLEGE)
Sector-15- A, Vashi, Navi Mumbai - 400 703**

Program: Medical Imaging Technology.

**Syllabus for F.Y.B.Sc. Medical Imaging
Technology.**

**(National Education Policy-2020, Grading
and Semester System with effect from the
academic year 2023-2024)**

Rayat Shikshan Sanstha's
**Karmaveer Bhaurao Patil College Vashi Autonomous
College**

Syllabus

Sr. No.	Heading	Particulars
1	Title of Course	F.Y.B.Sc. Medical Imaging Technology
2	Eligibility for Admission	12th Science and equivalent [of recognized Boards]
3	Passing Marks	40%
4	Ordinances/Regulations (if any)	-----
5	No. of Years/Semesters	One year/Two semester
6	Level	U.G.
7	Pattern	Semester
8	Status	Revised
9	To be implemented from Academic year	2023-2024



Preamble

Imaging technology is the branch or speciality of medicine that deals with the study and application of imaging technology to diagnose and treat the disease, the basic aim is to provide students with knowledge and training that will enable them to work in various lab & Hospital settings.

Educational Pedagogy:

The course design is based on NEP2023 guidelines where learner is given a choice to have vertical mobility while pursuing this program. His annualized credits earned will be banked to allow his subsequent year's enrollment. The 4 year degree program is designed as –

- 1st year BSc with Certification in X-ray tech
- 2nd Year BSc with Adv X-ray & CT in Medical Imaging Technology &
- 3rd Year BSc is with Degree in Medical Imaging Technology.
- 4th Year BSC is with Bachelor's Hons in Medical Imaging Technology.

The pedagogical design is based on the core objective of making students job ready and hence a lot of focus is given in learner's engagement through Industry based skilling in Hospitals.

As anyone who seeks admission in this program comes from non-healthcare background, the course starts with the Foundation Course which is more like a platform setting to make learner understand the topicalities and Dos and Don'ts of Healthcare Organizations.

Industry interface is divided into 3 phases of learning as –

- Observership – Objective is to see what is being taught in the class room through clinical sessions on the subject.
- On The Job Training – Objective is to learn the job skills by working with someone.
- Internship – Working independently, but under supervision as per defined job role.

Considering that the program needs to empower job readiness of learners, a lot of focus is kept in active engaging Life Skills workshops. These cover topics like Self Awareness, Objective setting, Team Work, Leadership Development, Time Management, Communication Skills, Interpersonal abilities etc.

Program also focuses in creating a better path for students to pursue their higher education opportunities in healthcare sector. As such special skill enhancing modules like Basic Life Support, Bed Side Care, Hospital Administration and Public Health etc. are included in the curriculum. This will help learners to get into PG programs like Masters in Hospital Management or Masters in Hospital Administration or Masters in Public Health.

As regards to the Core expertise of the program on Imaging Technology, key subjects that get covered are –

X-Ray :

- X-ray technologist responsible for Using x-ray equipment to take radiographic images of patients' bones, tissues, and organs as per physicians' written orders.
- Explaining x-ray procedures to patients and answering their questions. Working closely with the resident Radiologist to determine whether further tests are required.
- Maintaining an accurate record of completed x-ray procedures



- **CT Technologist**

CT technologists take diagnostic images of patients' internal structures using computerized tomography equipment. They ensure that patients are correctly positioned and closely monitored during CT scans.

- **MRI**

A non-invasive imaging technology used to investigate anatomy and function of the body in both health and disease without the use of damaging ionizing radiation. It is often used for disease detection, diagnosis, and treatment monitoring. It is based on sophisticated technology that excites and detects changes in protons found in the water that makes up living tissues.

An MRI technologist operates a magnetic resonance imaging (MRI) scanner to create several cross-sectional images of an area of a patient's body. These are combined to create a 3D image, which is used as a diagnostic tool.

The technologist, explains the procedure and places the patient in a specific position. For some scans, the technician administers a contrast dye intravenously to improve the quality of the image. (The dye is used to see vascularity in masses or tumors.).

Interventional Radiology

In interventional radiology (also called IR), doctors use medical imaging to guide minimally invasive surgical procedures that diagnose, treat, and cure many kinds of conditions. Imaging modalities used include fluoroscopy, MRI, CT, and ultrasound

Bone mineral density (BMD) is defined as the amount of mineral (calcium hydroxyapatite) per unit of bone and can be used as an indirect indicator of bone strength. The bone mineral density is used to determine if osteopenia or osteoporosis are present.

Mammography

Screening mammography is a specific type of breast imaging that uses low-dose x-rays to detect cancer early – before women experience symptoms – when it is most treatable.

Fluoroscopy is an imaging modality that allows real-time x-ray viewing of a patient with high temporal resolution. It is based on an x-ray image intensifier coupled to a still/video camera. In recent years flat panel detectors (which are similar to the digital radiography used in projection radiography) have been replacing the image intensifiers.

Key Objectives of this program:

- To implement NEP 2020 through this Vocational Skills development program
- Learners will inculcate right attitude, skills and knowledge to do the job role of Medical Imaging Technologist as required by the industry.
- Program will also empower learners' abilities to pursue higher education in medical industry



After completing this program, learner will exhibit following skills and knowledge as Medical Imaging Technologist:

- Demonstrate knowledge about the healthcare sector and diagnostic services
- Demonstrate the ability to perform clinical skills essential in providing basic diagnostic services such as Correctly perform, position & scan the patient.
- Demonstrate quality assurance in Imaging works
- Practice infection control measures
- Demonstrate readily availability of medical and diagnostic supplies
- Demonstrate techniques to maintain the personal hygiene needs
- Demonstrate actions in the event of medical and facility emergencies
- Work as a medical Imaging professional with right attitude in any lab setting Additionally, he will be developing following allied skills and knowledge through this program:
- CPR
- Care giver
- Basics on Hospital management
- Good communicator & allied health professional



Program Outcomes (PO) - B.Sc. MIT

PO-1	<p>Disciplinary Knowledge:</p> <p>(i) Acquire knowledge with facts and figures related to various subjects in pure sciences such as Physics, Chemistry, Mathematics, Microbiology and Computer Science; and Biotechnology, Information Technology and its other fields related to the program.</p> <p>(ii) Understand the basic concepts, fundamental principles, theoretical formulations and experimental findings and the scientific theories related to various scientific phenomena and their relevance in the day-to-day life.</p>
PO-2	<p>Communication Skills: Develop various communication skills such as reading, listening and speaking skills etc., which will help in expressing ideas and views clearly and effectively.</p>
PO-3	<p>Critical Thinking: Think creatively to propose novel ideas in explaining the scientific data, facts and figures related to science and technology.</p>
PO-4	<p>Analytical Reasoning and Problem Solving: Identify, describe, formulate, interpret, analyze the data systematically and solve theoretical and numerical problems in the diverse areas of science and technology and provide alternate solutions to the problems.</p>
PO-5	<p>Sense of Inquiry: Curious for asking relevant questions like why and how for better understanding of the basic concepts, fundamental principles, scientific theories and applications related to the study.</p>
PO-6	<p>Use of Modern Tools: Use of modern tools, equipment, instrumentation and laboratory techniques to design and perform the experiments and write the programs in different languages (software).</p>
PO-7	<p>Research Skills: Ability to search for, find, collect, analyze, interpret and evaluate information/data that is relevant to the subjects related to science and technology being studied.</p>
PO-8	<p>Application of Knowledge: Develop scientific outlook with respect to the subjects related to science and technology and also participate in various social and cultural activities.</p>
PO-9	<p>Ethical Awareness: Imbibe ethical and social values in personal and social life leading to cultured and civilized personality.</p>
PO-10	<p>Teamwork: Work effectively within the groups and individuals, participate and take initiative for various field-based situations related to science, technology and society at large.</p>
PO-11	<p>Environment and Sustainability: Understand how development in science and technology and interdisciplinary subjects are taking place for protecting our environment and sustainable developments.</p>
PO-12	<p>Lifelong Learning: Ability of self-driven to explore, learn and gain knowledge and new skills to improve the quality of life and sense of self-worth by paying attention to the ideas and goals throughout the life.</p>

Program Specific Outcomes (PSO) B.Sc. MIT

At the end of four year program students will understand and be able to

PSO-1	Understanding different branches and their functions of medical Imaging like X-ray, CT, MRI, Fluoroscopy, ECG through on the job training and internships in hospitals.
PSO-2	Demonstrate knowledge using right positioning techniques & perform radiographic procedures of specified imaging modality such as X-ray, CT, MRI technology ensuring safety of patients and personnel involved.
PSO-3	Identify and analyse artifacts related to various Imaging domains of clinically relevant procedure of the patients & maintain quality of the images also determine right exposure factors to achieve optimum radiographic procedures consistent with minimizing dose to patients.
PSO-4	Employ effective communication practices to provide sufficient information effectively to the patient about the imaging options available, purpose of the procedure, benefits, possible adverse consequences, and limitations
PSO-5	Understand and apply principles of radiation protection for the patient, technologist, and others and recognize their technologist role in the health care system and function effectively in a multidisciplinary health care team.
PSO-6	Practice effective written communication skills for creating & analyzing medical imaging reports.
PSO-7	Learning the advancement & modifications of high-resolution technology in the Imaging set up, their upkeep and error minimization.
PSO-8	Developing a professional Imaging technologist through various ability enhancement programs on communication skills, life skills, field visits and personality development workshops.
PSO-9	Understanding the larger scope of medical profession and creating an opportunity for higher education in hospital management domain and overseas work opportunities.

Course Outcome (CO) Semester 1

Course Code	Name of the Course	Course outcomes
UGMITC101	General Human Anatomy & Physiology	<p>CO1. Explain the morphology, physiology of skeletal system along with the physiology of muscle contraction in co-ordination with the joints, their articulation and skin [1-3]*</p> <p>CO2. Describe & explain the composition, function of various body fluids like blood, lymph cardiovascular and respiratory system their significance and related disorders. [2]*</p> <p>CO3. Classify the peripheral nervous system, nerves and morphology of special senses & Discuss diseases, disorders, and conditions commonly found in healthcare occupations [4]*</p>
UGMITC102	Fundamentals of Hospital Practices & Protocols	<p>CO1. Recognize, define, and spell terms related to the pathology and treatment of body systems. Analyze and apply knowledge to a real-life scenario. Define common word roots, combining forms, suffixes, and prefixes. Identify and describe the major functions and structures of the body systems [1]*</p> <p>CO2. Explain methods to prevent the spread of infection. Summarize the engineering, work practice, and environmental controls that protect against healthcare-associated infections AND Identify barriers and personal protective equipment for protection from exposure to potentially infectious material and Improve their general hygiene routine and personal image. Understand the importance and benefits of self-care.[5-4]*</p> <p>CO3 Implement strategies for Standard and Transmission-Based Precautions in healthcare settings. Prevent the spread of germs and disease by using the correct techniques for hand hygiene. Protect oneself and those served by technologist recognizing the chain of infection[3]*</p>
UGMITAEC101	Communication Skill	<p>CO1.Understanding and improving General vocabulary, properly understand the meaning and implement in academics through formal communication[1&2]*</p> <p>CO2. Applying parts of speech while framing sentences. Additionally, they will learn all the kinds of sentences that are required while having a basic interaction in English with anyone[3]</p> <p>CO3. Understanding the time mentioned in the sentences by identifying action verbs & helping verbs and then frame sentences mentioning about the proper work/event happened on specific time. [1&2]*</p>
UGMITGE101B	Introduction to Physics-1	<p>CO1: Understand the fundamental concepts of quantities and units, and their significance in scientific measurement. various physical quantities, such as length, mass, time, and their measurement methods [2]*</p> <p>CO2: Explain the structure of an atom, the properties of its subatomic particles, and how it contributes to the periodic table. [3]*</p> <p>CO3: Analyze the inverse square law as it relates to electromagnetic phenomena and discuss the fundamental concepts of electronics, including their significance in technological applications and Discuss the magnetic effect of electric current and its applications in devices such as electromagnets and electric motors. [2-4]*</p>

Course Outcome (CO) Semester 2	
X-Ray technology & Positioning	<p>CO1. Study of medical instruments and equipment technology in a X-ray set up [1]*</p> <p>CO2. Learn aspect of patient care, from diagnostic testing ,treatment and radiographic appearances of both normal and common abnormal conditions [3]*</p> <p>CO3. Understand the basic patient positioning during radiographic investigation and overall X-ray organization [2]*</p>
Fundamentals of surfaced anatomy	<p>CO1. Analyze, locate and demonstrate surface marking of clinically important structures in the cadaver and correlate it with living anatomy.[4]*</p> <p>CO2. Understanding important anatomic structures visualized by imaging techniques, specifically x-ray radiographs and Basic Postural Observational Skill: To make understand to the students about different anatomical landmark of upper limbs, lower limbs, thorax, and abdomen. [5-2]*</p> <p>CO3. Demonstrate accurate palpation skills of surface anatomy structure & describe all movements available at all joints and anatomy & physiology of cardiovascular, respiratory, digestive, nervous, urinary & reproductive system.[6-3]*</p>
Communication skills	<p>CO1. Learning report writing will make practice objective and passive form of writing. Additionally, the will learn to draft and present a Power Point Presentation that will be an aid while they present their views on certain topics. [1]*</p> <p>CO2. Creating the respective Resume and Job application for applying in various organizations and Understanding formal, informal, spoken & written English that will bridge the gap between their thoughts and words [2-3]*</p> <p>CO3. Students will dramatize (Role-pay) the certain topics to get involved in context and to experience the intention behind those sentences. [4&6]*</p>
Introduction to Physics-2	<p>CO1. study of all animals from tiny insects to large mammals as per Animal kingdom classification.[1]*</p> <p>CO2. to understand the vital normal physiological processes that is necessary to sustain human life[2]*</p> <p>CO3. Study of genes, genetic variations and heredity. DNA, RNA and genetic code for better understanding of genetics and molecular biology. [2]*</p> <p>CO4. To understand the normal and pathological life processes that occur for animal life to exist.[1]*</p>

Scheme of examination for Each Semester

Continuous Internal Evaluation: 40 Marks

Common Test 20 Marks & 20 Marks for Assignment, Projects, Group discussion, Openbook test, online test etc. based on Units of each paper.

Semester End Examination: 60 Marks will be as follows –

I.	Theory: The Semester End Examination for theory course work will be conducted as per the following scheme.	
	Each theory paper shall be of two hours duration.	
	All questions are compulsory and will have internal options.	
	Q – I	Subjective questions from Unit – I (having internal options.) 15 M
	Q – II	Subjective questions from Unit – II (having internal options.) 15 M
	Q – III	Subjective questions from Unit – III (having internal options.) 15 M
	Q- IV	Objective type questions based on all the Units with equal weightage. 15 M
II.	Practical	The Semester End Examination for practical course work will be conducted as per the following scheme.
Sr. No.	Particulars of Semester End Practical Examination	Marks %
1	Laboratory Work	80%
2	Journal	10%
3	Viva	10%
	TOTAL	100



**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester 1**

Paper 1 [UGMITC101]: GENERAL HUMAN ANATOMY & PHYSIOLOGY (MAJOR)				
Course Code	Unit	Topics	Credits	L/week
UGMITC101	I	Human Anatomy	4	4
	II	Human Physiology		
	III	Human Diseases		
Paper 2 [UGMITC102]: FUNDAMENTALS OF HOSPITAL PRACTICES & PROTOCOLS (MINOR)				
UGMITC102	I	Medical Terminology	4	4
	II	Infection control		
	II	BMW & Personal Hygiene		
Paper 3: [UGMITGE103]:GE INTRO TO Physics				
UGMITGE 103	I	Basic Physics (Quantities, heat, temp)	2	2
	II	Atomic structure & Periodic Table		
	III	Electricity & Electro Magnetic Induction		
Paper 4 [UGMITAEC104]: COMMUNICATION SKILL				
UGMITAEC104	I	Vocabulary and meanings	2	2
	II	Word class Nouns, Verbs, Adjectives and Adverbs		
	III	TENSES		
Semester 1 Practical				
UGMITP101	MAJOR	Understanding of Human body Functions	2	2
UGMITP102	MINOR	Norms of Healthcare Industry	2	2
UGMITGEP 101B	GE	Principles & Fundamentals of Physics	1	1
Additional 10 Credits <i>Sem -1 SDP(2 credits),IKS, Yoga/Music/Dance(2 credits), Sem-2 SDP(2 credits)Internship(2 credits)</i>				
*Exit option certification with 44 Credits				

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner



**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester 2**

Paper 1 [UGMITC201]:X-RAY TECHNOLOGY & POSITIONING				
Course Code	Unit	Topics	Credits	L/week
UGMITC201	I	Introduction to Radiology departments	4	4
	II	Discovery of X-ray Technology		
	III	Patient Positioning		
Paper 2: [UGMIT202]: FUNDAMENTALS OF SURFACED ANATOMY				
UGMITC202	I	Intro to surfaced anatomy	4	4
	II	Structure & functions of bones (skull,neck)		
	III	Thorax,Upper limbs & lower limbs		
Paper 3: [UGMITGE-203]: INTRODUCTION TO PHYSICS -2				
UGMITGE 203	I	ELECTROMAGNETIC INDUCTION	2	2
	II	TRANSFORMER & RECTIFIER		
	II	X-RAY GENERATOR CIRCUITS		
Paper 4 [UGMITAEC-204]:COMMUNICATION SKILLS				
UGMITAEC- 204	I	Effective Writing	2	2
	II	Spoken skills and Communication activities		
	III	Understanding Language Expression forms		
Semester 2 Practical				
UGMITCP201	MAJOR	X-ray Expertise & positioning	2	2
UGMITCP202	MINOR	Identify and note functions of surface anatomy	2	2
UGMITGE P203	GE	BASICS OF PHYSICS- 2	1	1
INTERNSHIP				
		X-RAY technology Expertise	2	2

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner



**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester 1**

Paper I		
CourseCode	Title	Credits
UGMITC 101	GENERAL ANATOMY AND PHYSIOLOGY	4
Unit I	Human Anatomy . <ul style="list-style-type: none"> • Cell Structure & Function, • Tissues Structure & Function • Body Membranes Structure & Function • Body Cavities, • Body Fluid Collection Procedures Clinical Relevance Study of Organ system and clinical relevance <ul style="list-style-type: none"> • Digestive system • Respiratory system • Circulatory system • Excretory system • Nervous system • Skeletal system • Endocrine system • Reproductive system • Lymphatic system 	
Unit II	Human physiology <ul style="list-style-type: none"> • Blood: Structure & Functions • Cell types, Plasma, Serum • Blood Transfusion, Grouping, Cross matching • Digestion • Respiration and Breathing Mechanism • Circulation • Excretion & Filtration of Urine • Hormones Reproduction • Menstruation • Metabolism of Carbohydrates, Fats, Proteins. 	
Unit III	Human Communicable Diseases <ul style="list-style-type: none"> • Bacterial, • Viral • Fungal • Protozoal • Parasites • Non communicable Diseases (Metabolic Diseases) • Kidney • pancreas • Heart • Liver • Gall bladder • Blood • Thyroid • Brain 	

We have designed special practical for this module to enhance allied healthcare professional skills of the learner

**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester-1**

Paper I		
Course Code	Title	Credits
UGMIT102	FUNDAMENTALS OF HOSPITAL PRACTICES & PROTOCOL	4
Unit I	Medical Terminologies Prefixes Roots, Suffixes, Short forms, Abbreviations, Meanings Medical Terminologies in Alphabets	
Unit II	Infection control <ul style="list-style-type: none"> • Introduction to Infection Control • Universal precautions Safety measures. • Modes of Transmission • Sterilization methods: Autoclave Disinfectants Sanitizers Personal Protective Equipment PPE use. 	
Unit III	BMW & Personal hygiene <ul style="list-style-type: none"> • Demonstrate Hand Wash steps • Demonstrate methods of Donning(wearing) & Doffing(removing) of PPE • Demonstration of BMW bags • Methods of Segregation • Categories & Containers • Pretreatment Temporary Storage • Transportation, Disposal • Safety measures • Waste management in Epidemics and Pandemics 	

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner



F.Y.B.Sc. Medical Imaging Technology
NEP-2020
SEMESTER I

UGMITGE 103	Paper III	Credits
	Physics-1	2
Unit I	Basic Concepts 1.1 1.Quantities & Units 1.2 2.Physical quantities 1.3 3.Temperature & Heat 1.4 4.Radiological Mathematics	
Unit II	Atomic Structure & Electronics 2.1 1.Atom 2.2 2.Electromagnetic Radiation 2.3 3.Fluorescence 2.4. 4Inverse Square law & Electronics	
Unit III	Electricity & Magnetism 3.1 1.Electric charge 3.2 2.Electric potential 3.3 3.Electrostatic Induction 3.4 4.Electric Current & Magnetism Magnetic Effect of electric current	



F.Y.B.S.C
Medical Imaging Technology
NEP-2020
Semester 1

UGMITAEC 104	Paper IV	Credits
	COMMUNICATION SKILL	2
Unit I	.Vocabulary and meanings <ul style="list-style-type: none"> • Word study • Basic communication • Common Errors 	
Unit II	Word class <ul style="list-style-type: none"> • Nouns, Verbs, Adjectives, and Adverbs • Conjunction, Preposition, Pronouns, • Determines Types of Sentences • Compound, and Complex Structures 	
Unit III	Tenses <ul style="list-style-type: none"> • Simple Past, Present Perfect, Past Perfect. • Simple + Progressive Aspect, Modal Verbs • Conditional Sentences, Verbs, and Idiom's 	

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner



**F.Y.BSc. Medical Imaging Technology
NEP-2020**

UGMIT 101P	Human anatomy ,physiology AND Healthcare Industry <ul style="list-style-type: none"> • Identification of systems • Determination of the Physiological Processes of systems, • AnatomyCase studies of diseases. 	2
UGMI T102P	SOP of Healthcare Industry <ul style="list-style-type: none"> • Demonstrate Hand Wash steps • Demonstrate methods of Donning(wearing) & Doffing(removing) of PPE • 3.Demonstration of BMW bags • 4.Demonstrate Respiratory Etiquettes • 5. Identification of Personal Protective Equipment • 6. Evaluate Epidemic and Pandemic Precaution 	2
UGMI T104P	<p style="text-align: center;">PHYSICS</p> <ul style="list-style-type: none"> • 1.Quantities & Units • 2.Physical quantities • 4.Temperature & Heat • 5.Radiological Mathematics 	1

**Semester 1
Practical**



**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester 2**

Paper- I		
Course Code	Title	Credit
UGMITC 201	X-RAY TECHNOLOGY & POSITIONING	4
Unit I	Intro to Radiology Department <ul style="list-style-type: none">• Different Modalities• X-RAY PHYSICS• Discovery of X-ray & Production• X-ray machine & equipment	
Unit II	Patient Positioning & Patient Preparation <ul style="list-style-type: none">• Upper limbs & Lower Limbs• Thorax• Skull	



	<ul style="list-style-type: none">• Neck• Abdomen	
Unit III	Safety Procedures <ul style="list-style-type: none">• Patient's Comfort & Safety• Radiation Hazards• Case studies	

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner



.Y.BSc. Medical Imaging Technology
NEP-2020
Semester 2

Paper II		
Course Code	Title	Credits
UGMITC202	Fundamentals of Surfaced Anatomy	4
Unit I	Surfaced anatomy - 1 <ul style="list-style-type: none"> • Bones • Skull • Facial Bones • Cranial Bones • Neck • Thorax 	
Unit II	Surfaced anatomy - 2 <ul style="list-style-type: none"> • Respiratory System • Digestive System • Endocrine System 	
Unit III	Surfaced Anatomy – 3 <ul style="list-style-type: none"> • Upper Limbs & Lower limbs • Reproductive system • Male & female 	

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner

**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester 2**

Paper III		
Course Code	Title	Credit
UGMITGE203	INTRODUCTION TO PHYSICS - 2	2
Unit I	Electromagnetic Induction <ul style="list-style-type: none"> • Law's of electromagnetic Induction • AC Generator • Alternating Current • Electric Power transmission 	
Unit II	Transformer & Rectifier <ul style="list-style-type: none"> • Transformer Theory • Autotransformer • High Tension transformer 	
Unit III	X-ray Generator Circuits <ul style="list-style-type: none"> • Single phase, 3 phase circuits • Exposure switching & timing systems • Fuses, switches & Circuit breaker • High Tension Cable 	

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner



**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester 2**

Paper IV		
Course Code	Title	Credit
UGMIT AEC-204	Functional English	2
Unit I	1.Effective writing 1.1.1. Objectives 1.1.2. Resume, Job Application and Report Writing 1.1.3. Power of Technology, Making a PPT	
Unit II	1.Spoken Skills and Communication Activities 2.1.1. Different styles of Spoken and Written English 2.1.2. Introducing Yourself and Role Playing 2.1.3. Asking questions/Answering questions	
Unit III	1.Understanding Language expression forms 3.1.1. Debates/Arguments and Listening Skills 3.1.2. Casual Conversation and Listening Skills 3.1.3. Reading a Narrative Passage	

- We have designed special practical for this module to enhance allied healthcare professional skills of the learner



**F.Y.BSc. Medical Imaging
Technology
NEP-2020
Semester 2 Practical**

Course Code	Title	Credit
UGMITC 201P	X-ray Expertise AnD Patient Positioning	2
	X-ray Expertise (OJT& Internship in Hospitals/Healthcare facility of X-ray) <ol style="list-style-type: none"> 1. Introduction to X-ray department 2. Machine parts 3. Basic Requirements of X-ray equipment 4. Use of different objectives of X-ray Equipment 5. Patient Preparation & Patient Instructions 6. Positioning techniques 	
UGMITC 202P	Identification of anatomical parts & functions	2
UGMITGE -203P	Introduction to Physics – 2 High tension Cables Switches Fuses Circuits	1

References:

1. iTransform Handbook on Anatomy, Physiology Jaypee brothers
2. iTransform Handbook on Foundation Program
3. iTransform Handbook on Medical Terminologies
4. iTransform Handbook on Imaging technician handbook
5. Clark Positioning Book for radiographers
6. Bhargava book for residents & technologist.
7. Procedures book Bhushan Lakkhar



A handwritten signature in blue ink, appearing to read "J. Somaiya".

HOD,
Department of Microbiology

