YENEPOYA

(DEEMED TO BE UNIVERSITY)
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YENEPOYA INSTITUTE OF ALLIED HEALTH SCIENCES

PROGRAM OUTCOMES AND COURSE OUTCOMES

UNDERGRADUATE PROGRAM

BACHELOR OF SCIENCE

MEDICAL IMAGING TECHNOLOGY

PROGRAM OUTCOMES

UNDERGRADUATE PROGRAM

BACHELOR OF SCIENCE MEDICAL IMAGING TECHNOLOGY

(K -Knowledge, S -Skill , A -Attitude)

PO 1	Function as competent entry level medical imaging technologists (K,S,A)
PO 2	Demonstrate the ability to use theoretical knowledge and critical thinking skills in clinical practice (K,S)
PO 3	Select appropriate technical factors for exposure related to the positioning (K,S)
PO 4	Provide patient care before, during and after the procedures (S,A)
PO 5	Perform appropriate examination required for patients (K,S)
PO 6	Select and operate different modalities as per to the need of physician (K,S,A)
PO 7	Understand the various diagnostic and therapeutic modalities based on the patients history and examination findings. (K,S)
PO8	Prepare the patient as per the need of the procedure to be performed (S,A)
PO9	Provide best clinical information to the physician (K,S)
PO10	Modify the protocols according to the demand and need (K,S)
PO11	Assist radiologists during minimally invasive procedures under the imaging guidance (K,S)
PO12	Demonstrate effective oral and written communication skills (S,A)
PO13	Use of radiation protective devices to limit the radiation dose for both patient and radiation personnel (K,S)

ATTESTED

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COURSE OUTCOMES

UNDERGRADUATE PROGRAM

BACHELOR OF SCIENCE MEDICAL IMAGING TECHNOLOGY

Semester I

Anatomy	CO	**Description**
	CO 1	Comprehend the gross,functional and applied anatomy of various structures in the human body along with their inter-relationships.
	CO 2	Correlate the structure with the functions.
	CO 3	Competent to apply anatomical knowledge to perform minor technical procedural skills

Physiology	CO	**Description**
	CO 1	To broadly understand the physiological structure of each organ system and its physiological functions
	CO 2	To understand broadly the clinical abnormalities of organs and its clinical physiological implications

Biochemistry	CO	**Description**
	CO 1	Understanding the basic principles and procedures in specimen collection, reagent preparation and testing in Clinical laboratory
	CO2	Understanding the properties of biomolecules, their function and biochemical process involved in health and disease
	CO3	Understanding the importance of nutrition in health and disease

Basic Physics	CO	**Description**
	CO 1	To memorize the fundamental physical phenomena of equipment in radiology
	CO 2	to relate the working principle of components of various modalities
	CO 3	To distinguish imaging modalities based on the phenomenon used

English and Communication Skills	CO	Description
	CO 1	Enable students in enhancing the ability to comprehend spoken and written English.
	CO 2	Avail effective communicative English in their professional work.
	CO 3	Practice students' skills in verbal and written English during clinical and classroom experiences.

Constitution of India	CO	Description
	CO 1	Understanding the structure of Constituent Assembly
	CO 2	To understand the fundamental duties and rights of Indian citizen
	CO 3	Knowledge regarding electoral process of India
	CO 4	Understand the importance of directive policies of state policies
	CO 5	Understand the structure and composition of Indian Constitution, and the ways of amending the constitution
	CO 6	Stimulate the roles of each of the three branches of government
	CO 7	Understand the provisions in the constitution for different areas

Semester II

General Pathology	CO	Description
	CO 1	To be able to define the medical terms, define and classify disease and understand the concepts of the disease.
	CO2	Able to describe the causes and mechanism of common diseases that occur during the routine work and also changes seen in different individuals and various organs and fluids
	CO3	Able to enumerate the laboratory tests eg: urine, blood, bodyfluids and its application on various diseases

Microbiology	CO	Description
	CO 1	Understanding of role of microbial agents in health and disease
	CO 2	Understand and practice various methods of Sterilization and disinfection

Radiation Physics and Medical Physics	CO	**Description**
	CO1	To summarize the production of x-rays
	CO2	To classify the equipment based on their uses in imaging
	CO3	To list the advantages and disadvantages of radiation
	CO4	To relate the use of accessory devices to control primary and secondary radiation
	CO5	To provide best image quality with optimized radiation dose

Health Care	CO	**Description**
	CO 1	Describe the concepts of health,illness and national health policy various welfare programs in India.
	CO 2	Explain the concepts of Nursing
	CO 3	Explain the basic special needs of the patient, bandaging and first aid for common emergencies
	CO 4	Explain infection control

Environmental Studies	CO	**Description**
	CO 1	Students will be able to learn about environment, factors affecting it, environmental ethics and its protection
	CO2	Students will be able to describe a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturabilityand sustainability
	CO3	Students will be able to Critically analyze technical subject matter (written or oral) for scientific merit apply learned environmental knowledge and understanding to solve technical /research problems in new contexts

Sociology	CO	**Description**
	CO 1	Able to understand the meaning of sociology, it relationship with other disciplines and also to gain knowledge on the sociological methods of investigations
	CO 2	Able to understand social factors and its role in health and disease

CO 3	Able to understand the meaning,importance and agencies of socialization
CO 4	Able to understand the concept and role of social groups in health, sickness and rehabilitation
CO 5	Able to understand the meaning of family and its role in health, nutrition and sickness among members
CO 6	Able to understand the meaning, features and health hazards of rural and urban communities
CO 7	Able to understand the concept of culture and health and their relationship
CO 8	Able to understand the meaning of social change, factors of social change, social change and stress, social change and health
CO 9	Able to understand the meaning of social problems and types of social problems in the society
CO 10	Gain knowledge on the social security and social legislation measures for the disabled
CO 11	Able to understand the meaning of social work and role of medical social worker

Ethics

CO	DESCRIPTION
CO1	To understand the fundamentals of Medical Ethics
CO2	To Understand the Ethical Issues in Professional conduct of Healthcare
CO3	To gain knowledge in the Medico legal aspects of health records in healthcare practice
CO4	To be able to explain the respective ethical challenges and potential conflicts of interest in the functional departments of the organization
CO5	To increase the awareness and knowledge of the value dimensions of interactions with the patients, colleagues, relations and public.
CO6	To Understand and respect the rights of th epatient and the duties responsibilities of the healthcare people

Semester III

Radiographic photography and imaging processing	CO	**Description**
	CO 1	To structure a darkroom layout suitably to the departmet
	CO2	To express the uses of the radiographic film and dark room accessories
	CO3	To relate the different practices of processing methods of a film
	CO4	To determine the possible film artifacts by improper handling
	CO5	To define the principles behind the radiographic image formation

Radiographic positioning - 1	CO	**Description**
	CO 1	To annotate positioning landmarks and terminology
	CO2	To perform positioning without technical and manual errors to avoid repeat exposure
	CO3	To be aware of routine and supplementary views for each anatomical region
	CO4	To apply special positioning skills for different pathological and physical conditions.
	CO5	To use essential aids to reduce radiation dose and to improve image quality

Pharmacology	CO	**Description**
	CO1	Know the basics of pharmacology like history, scope & general principles
	CO2	Describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs.
	CO3	To appreciate adverse reactions and drug interactions of commonly used drugs
	CO4	Knowledge on essential drugs in special conditions such as diuretics, opioids, corticosteroids, antihistamines, antiemetics, IV fluids and Immuno suppressants etc

Radiation protection	CO	Description
	CO1	To identify the protcetive measures to be taken in the department
	CO2	To choose appropriate exposure factors
	CO3	To outline the biological effects of radiation
	CO4	To determine the primary and secondary barriers of radiation
	CO5	To implement radiation surveys effectively

Kannada	CO	Description
	CO 1	To comprehend and communicate in simple Kannada and improve their vocabulary of daily usage
	CO2	To understand distinct sounds and improve pronunciation
	CO3	To form simple sentences to talk to patients, bystanders and the localities

Semester IV

Radiographic positioning - 2)	CO	Description
	CO1	To annotate positioning landmarks and terminology
	CO2	To perform positioning without technical and manual errors to avoid repeat exposure
	CO3	To be aware of routine and supplementary views for each anatomical region
	CO4	To apply special positioning skills for different pathological and physical conditions.
	CO5	To use essential aids to reduce radiation dose and to improve image quality

Radiological procedures - 1	CO	Description
	CO1	To have an idea of basic anatomy and related procedures to perform
	CO2	To position patients accurately for appropriate procedure
	CO3	To distinguish indications and contra indications for procedure based on patient history
	CO4	To classify the contrast media based on solubility, physiology of excretion and the procedure to be perform
		To assist radiologist by setting the equipment required for procedure

USG & Doppler	CO	Description
	CO1	To outline the importance of ultrasound
	CO2	To categorize and choose transducers according to their use
	CO3	To infer different protocols used for various anatomical regions
	CO4	To memorize physics beyond ultrasound imaging
	CO5	To define the advancements in ultrasound and doppler imaging

Biostatistics	CO	Description
	CO 1	At the end of the course students will be familiar with statistics methods and techniques.
	CO 2	After the completion of the course students will be able to manage the data with various validation and cleaning process
	CO 3	At the end of the course students will be familiar with different types of data analysis techniques.
	CO 4	At completion of the course students can able to operate the statistical software to describe the data with proper presentation.

Semester V

Radiological procedures – 2	CO	Description
	CO1	To have an idea of basic anatomy and related procedures to perform
	CO2	To position patients accurately for appropriate procedure
	CO3	To distinguish indications and contra indications for procedure based on patient history
	CO4	To classify the contrast media based on solubility and physiology of excretion
	CO5	To assist radiologist by setting the equipment required for procedure

	CO	Description
Nuclear Medicine & Interventional Radiology	CO1	to have an idea on uses and hazards of radioactive materials
	CO2	to have knowledge of proper handling of radioactive sources
	CO3	to know how the radiation will be detected by radiation detection devices
	CO4	to have an idea on vascular anatomy
	CO5	to distinguish the types of catheters and their uses

	CO	Description
patient care in medical imaging	CO1	know precautions to handle emergency patients of different pathology
	CO2	to be able to perform basic and advanced life support to the patient in case of emergency
	CO3	importance of consent form and documentation
	CO4	to know the emergency drugs used in the department
	CO5	to prepare sterile environment and equipments to perform procedure

Semester VI

	CO	Description
Basic and Advanced Instrumentation of Computed Tomography	CO1	understand the working principle of computed tomography
	CO2	to have an idea of components of CT and its relation in image formation
	CO3	complete knowledge about the protocols done in CT
	CO4	must know post processing techniques and related cross sectional anatomy
	CO5	to have knowledge about the tools and parameters to be used for specific procedure

	CO	Description
Basic and Advanced Instrumentation of Magnetic Resonance Imaging	CO1	To understand the working principle of MRI
	CO2	To have knowledge about the things restricted in MRI to carry
	CO3	Proper handling of the equipment and RF coils
	CO4	Distinguish the different zones in MRI