

PROGRAM OUTCOME (POs)	
Course Code	Medical Radiology and Imaging Technology
PO1	Advanced Knowledge of Radiology and Imaging Techniques: Graduates will possess in-depth knowledge of the principles, technologies, and clinical applications of various medical imaging modalities (X-ray, CT, MRI, ultrasound, nuclear medicine, etc.) and their role in diagnosis and treatment.
PO2	Technical Proficiency in Imaging Equipment: Graduates will demonstrate the ability to operate, troubleshoot, and maintain advanced radiology and imaging equipment, ensuring safe, accurate, and effective image acquisition.
PO3	Radiation Safety and Protection: Graduates will understand the principles of radiation protection and safety, and will be skilled in minimizing patient exposure to radiation while ensuring high-quality diagnostic images
PO4	Image Analysis and Interpretation: Graduates will be proficient in the interpretation of diagnostic images, identifying normal and abnormal findings, and understanding their significance in clinical practice for accurate diagnosis and treatment planning.
PO5	Research and Evidence-Based Practice: Graduates will be able to critically evaluate and apply current research in medical imaging to enhance practice, contribute to the field's advancement, and engage in evidence-based decision-making in clinical settings.
PO6	Ethical and Professional Practice: Graduates will demonstrate high standards of professional and ethical behavior in patient care, maintaining patient confidentiality, consent, and dignity, while working collaboratively in multidisciplinary healthcare teams.
PO 7	Leadership and Management in Imaging Technology: Graduates will be capable of leading and managing imaging departments or teams, contributing to healthcare administration, quality control, and continuous improvement in imaging practices.
PO8	Continuing Education and Professional Development: Graduates will engage in lifelong learning, staying current with emerging technologies, regulatory standards, and advancements in radiology and imaging technology, contributing to the continuous improvement of healthcare services.
Course Outcomes (COs)	
Course Code	Medical Radiology and Imaging Technology
SEMESTER I	
MMRIT 101 T MMRIT 103 P	Principles of Radiographic Exposure
CO1	Understanding the basic concepts, theories & method, in applied physics relevant to radiological imaging techniques & image quality
CO2	Categorizing provisions for radiation safety by various national & international regulatory bodies.
CO3	Tagging of different imaging modalities in radiology department
CO4	Differentiating EMR and its application in X –ray diagnosis and therapy.
CO5	Evaluating the factors affecting the image quality from x ray.
MMRIT 102 T	Radiation Protection in Diagnostic Radiology
CO1	Understanding the concepts and methods of radiation protection principles and their applications in radiology department.
CO2	Obtaining knowledge for management and handling the equipment for various procedures.
CO3	Applying the regulations of radiation practices according to internationally accepted methods.
CO4	Practicing the techniques of radiation protection of patients, occupational workers and general public from secondary radiation.
CC 001 T CC 001 P	Research Methodology & Biostatistics (Core Course)
CO1	Student will be able to understand develop statistical models, research designs with the understating of background theory of various commonly used statistical techniques as well as analysis interpretation & reporting of Results and use of statistical software.
MMRIT 104 CP	MMRIT Directed Clinical Education-I
CO1	Build a robust theoretical foundation, enabling students to understand healthcare practices, disease management, and patient care, thereby empowering them to make informed decisions and adapt to evolving medical technologies.
CO2	Emphasize hands-on training, ensuring proficiency in clinical procedures, diagnostic techniques, and the use of advanced medical equipment. This practical exposure will bridge the gap between theory and practice, enhancing students' confidence and competence in delivering quality patient care.
CO3	Focus on developing professionalism, empathy, ethical conduct, teamwork, and communication skills—key traits for holistic patient care and effective collaboration in interdisciplinary healthcare teams.

SEMESTER II	
MMRIT 105 T	Radiological Procedures
CO1	Annotating the basic concepts, theories, techniques & equipment, in and conventional radiography relevant to X-Ray equipment.
CO2	Tagging related anatomy of organ for independently performing different diagnostic radiologic procedures.
CO3	Discussing equipment and supplies necessary to complete special radiographic procedures with administration of contrast media.
CO4	Evaluating the safety aspects of contrast media and describe the allergic reactions associated to use of different contrast media for diagnostic purpose.
MMRIT 106 T	Instrumentation of conventional Radiological Equipments
CO1	Understanding the basic concepts, theories & method, in applied physics relevant to radiological imaging techniques & image quality.
CO2	Expressing the components and working of equipments related to x-ray
CO3	Operating X-Ray imaging equipment independently
CO4	Demonstrating application of different components of x-ray.
CO5	Analyzing maintenance requirement and care of x ray equipment in radiology department.
MMRIT 107 T	Insturmentation of Specialized Radiology Equipements
CO1	Understanding the basic concepts, theories, techniques & equipments for different interventional radiological procedures.
CO2	Applying the patient preparations needed before & post procedure care in any interventional radiological examination.
CO3	Applying provisions for radiation safety and protection as prescribed by various national & international regulatory bodies.
CO4	Calculating the factors affecting the image quality
CO5	Applying Care, maintenance and tests, Quality assurance program for equipments.
MMRIT 109CP	MRIT Directed Clinical Education-II
CO1	Build a robust theoretical foundation, enabling students to understand healthcare practices, disease management, and patient care, thereby empowering them to make informed decisions and adapt to evolving medical technologies.
CO2	Emphasize hands-on training, ensuring proficiency in clinical procedures, diagnostic techniques, and the use of advanced medical equipment. This practical exposure will bridge the gap between theory and practice, enhancing students' confidence and competence in delivering quality patient care.
CO3	Focus on developing professionalism, empathy, ethical conduct, teamwork, and communication skills—key traits for holistic patient care and effective collaboration in interdisciplinary healthcare teams.
Skill Enhancement Course	
SEC 001 T	Innvotion and Enterprenuarship
CO1	Students will grasp the concepts of innovation, its ecosystem, and the role of various stakeholders such as government policies, startups, and innovation hubs.
CO2	Cultivating an entrepreneurial mindset and leadership qualities necessary for driving innovation and leading ventures.
CO3	Understanding the intersection of technology and innovation and leveraging emerging technologies for entrepreneurial ventures.
SEC 002 T	One Health (NPTEL)
CO1	A comprehensive understanding of One Health's role in global health challenges, emphasizing interconnectedness among human, animal, and environmental health.
CO2	Topics include research ethics, disease surveillance, and successes in controlling emerging infectious diseases.
CO3	Students explore disease emergence, transmission, antimicrobial resistance, and food safety, gaining insights into effective public health strategies.