

## Appendix IV

### Course Descriptions for Radiological and Sonar Sciences

#### Spring Semester – Pre 1

##### UNI 101 -First Year University Experience (3 Credits)

This course acclimates and prepares students for university life. It introduces students to academic practices such as critical reading and thinking, study and research skills, information literacy, cultural diversity, and collaborative learning within an American Style liberal arts educational environment.

Prerequisites: None.

##### ENL 101 - Expository Writing (3 Credits)

This course will enable students to practice writing in several contexts and forms (from personal narrative to inquiry and argument). They will develop increasingly complex essays incorporating the ideas and language of other writers in placing their voice within academic or public debates.

##### BIO 101- Introductory Biology (3 Credits)

This course Covers basic concepts in biology. An introduction to the basis of life, structure and function of cells and systems, forms and functions of plants and animals, as well as genetics, evolution, and ecology.

##### PHI 101 - Introduction to Ethics (3 Credits)

This course provides a grounding in classical and historical ethics (eastern and western) with an “applied” focus. The students will connect ethical and moral considerations to real-world scenarios (in business, for example, or when discussing the environment) that will introduce how and why ethics matter in every discipline or profession they may choose to study. Topics may include environmental ethics, liberty, and morality, and war. Prerequisites: None

##### HCT 101 - Fundamentals of Healthcare Professions (3 Credits)

This course provides students with an overview of the various health professions by covering and discussing fundamental aspects of the healthcare system. It includes an overview of healthcare development, how health delivery systems are structured, legal and ethical considerations of healthcare delivery, and an overview of various healthcare professions. Students are encouraged to discover health professions through assignments, observations, and interviews.

#### Fall Semester – Pre 1

### **CSC 101 - Introduction to Computer Science (3 Credits)**

This course covers the fundamentals of computers and computer nomenclature, particularly with respect to personal computer hardware and software used in today's business environment. Students will survey and use business applications programs utilizing pre-written programs that include word processing, spreadsheets, databases, presentation graphics, and web browsers. Students completing the course will have a solid understanding of computer concepts, how to use computers in today's business world, and how to access information on the World Wide Web.

### **MAT 102 - Pre-calculus (3 Credits)**

Pre-Calculus is an introductory mathematics course designed to provide students with a strong foundation in mathematical concepts and skills necessary for further study in calculus and other advanced mathematics courses. The course covers a range of topics including functions, exponential and logarithmic functions, systems of equations, complex numbers, trigonometry, and limits. Students will develop problem-solving skills and critical thinking skills as they work through various real-world applications and mathematical concepts. The course is designed to provide a solid foundation in mathematical concepts that are essential for success in a variety of fields, including science, engineering, economics, and finance. Upon completion of the course, students will have a solid understanding of mathematical concepts and the ability to apply these concepts to a wide range of problems.

**PHY 100 Conceptual Physics (3 Credits)** This course provides introductory physics. The course material includes topics related to mechanics, waves, fluids and thermodynamics, vibrations and waves, and atomic and nuclear physics. The course aims as well to provide a basic understanding of physical processes and techniques needed for the further understanding of complex concepts.

### **SOC 101 - Introduction to Sociology (3 Credits)**

The Introduction to Sociology course provides students with a comprehensive overview of the fundamental concepts, theories, and perspectives in the field of sociology. The course addresses human behavior, interactions, and relationships within society. Students will examine how social structures and institutions shape human behavior, and how social and cultural norms and values impact individuals and society.

### **RAD 101 - Introduction to Radiologic Sciences (3 Credits)**

This course provides students with a comprehensive overview of the field of radiologic sciences and technology. This course covers the history and evolution of medical imaging, the various imaging modalities including X-ray radiography, computed tomography (CT), magnetic resonance imaging (MRI), and nuclear medicine imaging, and the principles of radiation physics and protection. The students will also learn about patient care and communication, medical ethics, and legal considerations in the field. This course makes use of a didactic combination of lectures, discussions, demonstrations, and hands-on experiments to introduce the student to topics in Radiologic Sciences.

## Spring Semester – Pre 2

### [HIS 101 - The Civilizations and History \(3 Credits\)](#)

This course considers the arts, history, government, philosophy, and religion in a pluralistic, global context to help students see and think beyond typical dichotomies, such as east versus west, from antiquity through 1500. Prerequisites: None.

### [ENL 201 - Academic Writing \(3 Credits\)](#)

This course enables students to demonstrate critical reading, interdisciplinary investigations, and research skills practiced in their core courses by investigating more deeply a question or idea raised in their core coursework and exploring topics in their proposed major. Prerequisite: ENL 101.

### [HCT 207- Introduction to radiation protection \(1 Credit\)](#)

This course provides a comprehensive overview of the principles and practices of radiation protection in medical imaging. The course covers the basic concepts of radiation physics, biology, and safety, as well as the regulatory requirements and guidelines for the use of ionizing radiation in medical imaging. Students will learn about the biological effects of radiation, the principles of radiation protection, and the proper techniques for minimizing patient and personnel exposure during medical imaging procedures. The course will also cover the essential elements of a radiation protection program, including the selection and use of protective barriers and personal protective equipment, radiation monitoring and record keeping, and the management of radiation incidents. Prerequisite: RAD 101.

### [PHY 241 -Medical Physics and Dosimetry and Lab. \(4 Credits\)](#)

The Medical Physics and Dosimetry course is designed to provide students with a comprehensive understanding of the fundamental principles and practical applications of medical physics and dosimetry. The course covers topics such as ionizing radiation, radiation protection, particle physics and radiation dosimetry, as well as the principles of image quality and patient dose/contrast optimization in diagnostic radiology and radiation therapy. Students will learn about the physics of imaging modalities, including X-rays, computed tomography (CT) scans, and nuclear medicine, ultrasound, and the modalities of their optimal and safe use in patients. The course also covers the use of various dosimetry instruments techniques and applications, as well as the principles of radiation safety, quality assurance, and quality control in medical imaging. Through a combination of lectures, hands-on laboratory experiments, and clinical exposure, students will gain a comprehensive understanding of medical physics and dosimetry and their clinical applications. Prerequisite: PHY 103 and MAT 102.

### [BIO 217 - Human Anatomy and Physiology I Lab. \(4 Credits\)](#)

This course introduces students to the anatomy and physiology of the human body with an emphasis on the skeletal, muscular, cardiovascular, renal, immune, nervous, endocrine, gastrointestinal, respiratory, and reproductive systems. A comprehensive knowledge of homeostatic regulation in the functions of the body and a discussion of imbalances to homeostasis will be covered. Prerequisite: BIO 101.

## Fall Semester – Pre 2

### ENL 210 - Introduction to Public Speaking (3 Credits)

Introduction to Public Speaking strengthens student's reasoning skills and understanding of the various rhetorical strategies available to them in both the writing process and in speaking publicly. Students are required to practice ethical integration and documentation of sources into speeches. The course is designed to introduce students to extemporaneous and both planned and documented types of speaking. To this end, students will be required to do research on topics and give oral presentations to the class based on their research. This course strongly reinforces the connection between writing and speaking.

### BIO 218 - Pathophysiology (3 Credits)

This course covers the pathogenesis of human disease based on a molecular and cellular framework. The first part of the course focuses on the following topics: fundamental concepts such as homeostasis, cell injury, protective responses—inflammation, fever, immune response—and the healing process. The course then proceeds to cover the following topics in systemic pathophysiology: abnormal functions of the cardiovascular system, endocrine system, nervous system, urinary system, muscular system, respiratory system, and digestive system. Prerequisite: BIO 217.

### BIO 210 - Biostatistics and Epidemiology (3 Credits)

This is a fundamental course that addresses the science of biostatistics, epidemiology, and distribution of diseases in each population with emphasis on infectious disease epidemiology. The course also covers the statistical methods used in the assessment of epidemiological distributions. Topics include research methods and design, descriptive statistics, performance characteristics of diagnostic tests, graphical methods, probability, estimation, hypothesis testing, p-values, regression and correlation, and clinical trials. Prerequisite: MAT 102.

### RAD 201 - Medical imaging systems I (3 Credits)

The course on medical imaging Systems I focuses on providing a comprehensive understanding of the principles, practices, and technologies involved in ionizing radiation imaging with focus on X-ray radiography and computed tomography (CT) imaging systems. The course covers the basics of conventional and digital radiography (DR), CT, fluoroscopy, mammography, and Cathlab imaging systems and how they are used to diagnose and treat various medical conditions. The course will delve into the physics and instrumentation involved in both radiography/fluoroscopy and computed tomography imaging and how these techniques are used in medical imaging. The course will provide hands-on experience and practical training in the use of ultrasound and radiography imaging equipment and will cover the various applications of these imaging systems in clinical practice. Prerequisite: RAD 101.

### RAD 210 - Contrast Agents and Radiopharmaceuticals (3 Credits)

This course focuses on the study of contrast agents and radiopharmaceuticals used in medical imaging and nuclear medicine with emphasis on pharmacokinetics and pharmacodynamics. The course covers the basic principles and properties of contrast agents and radiopharmaceuticals, including their mechanism of action and applications in medical imaging including intravenous, intra-arterial, intra-ductal, and intrathecal routes. Students will learn about the different types of contrast agents, including those used in computed tomography (CT), magnetic resonance imaging (MRI), fluoroscopic and ultrasound imaging and nuclear medicine imaging. Prerequisite: RAD 101.

**Spring Semester – P1**

### SOC 101 Introduction to Sociology (3 Credits)

## Introduction to Sociology

### [RAD 301 - Medical Imaging Systems II \(3 Credits\)](#)

The course of Medical Imaging Systems with a focus on Non-Ionizing Imaging Modalities will provide students with a comprehensive understanding of the principles, techniques, and applications of non-ionizing medical imaging. The course will emphasize the study of Ultrasound and Magnetic Resonance Imaging (MRI) modalities.

Students will learn about the physical and technical aspects of ultrasound topics include: propagation of ultrasonic waves in biological tissues, acoustic impedance, modulation transfer function and tissue harmonics, in addition to the principles of ultrasonic measuring and imaging instrumentation, design and use of contemporary tools for performance evaluation of diagnostic instrumentation, and biological effects of ultrasound the principles of sound waves and their interactions with biological tissues. They will also study the different types of ultrasound imaging, including real-time in A-Mode, B-Mode, C-Mode, M-Mode and Doppler imaging, and their clinical applications.

The course will also introduce the students to the principles of MRI operation, including the principles of magnetic resonance, spectroscopic localization, spin magnetization and the techniques used in MRI imaging, MRI sequences, such as proton density (PD) -weighted (T1-weighted, T2-weighted, and contrast-enhanced MRI, and their applications in different clinical imaging scenarios.

### [RAD 305 - Imaging Procedures I and Lab. \(4 Credits\)](#)

This course provides the student with the knowledge and skills to practice medical imaging in a simulated clinical environment and will focus on the optimization patient positioning and proper operation of imaging equipment of plane X-ray radiography, computerized radiography (CR), fluoroscopy, and computed tomography (CT) and mammography imaging. Moreover, students will learn to achieve the highest image quality with the best contrast-to-noise ratio and quickest scan time for different imaging procedures.

The course also addresses ultrasonography and radionuclide imaging. This course includes laboratory exercises with hands-on practical applications for topics discussed in the course. The course will also cover the importance of minimizing radiation exposure to the patient while still obtaining the best possible image quality. The students will be equipped with the knowledge and skills needed to implement best practices in imaging procedures, thereby improving patient outcomes, and optimizing the use of resources in healthcare. Prerequisite: RAD 210.

### [RAD 310 - Radiographic Anatomy and Pathology I \(3 Credits\)](#)

This course provides students with a comprehensive understanding of the anatomy and pathology of the human body as it relates to ionizing radiation imaging modalities. The course will focus on conventional radiography, fluoroscopy, mammography, and computed tomography (CT) imaging, with an emphasis on the anatomy and pathological conditions of various body systems. Students will learn the anatomy of various organ systems and the radiological appearance of normal and abnormal conditions, including the recognition and interpretation of common pathological conditions. The course will also cover the principles of imaging modalities and the impact of patient positioning and imaging techniques on image quality. The course will use a combination of lectures, imaging case studies, and hands-on experience to provide students with a solid foundation in the anatomy and pathology of the human body as it relates to ionizing radiation imaging modalities. Prerequisite: BIO 218.

#### [RAD 315 - Legal and Ethical Aspects in Radiologic Sciences \(1 Credit\)](#)

This course offers the student a study of legal and ethical issues in radiologic sciences. Topics include patient safety, informed consent, confidentiality, professional conduct, ethical theories, end of life care, living wills, confidentiality, risk management and radiology reporting quality review, Health Insurance Portability and Accountability Act (HIPAA), and implementation of the electronic health record.

Prerequisite: RAD 101

#### [HCT 209 - First Aid and Basic Life Support \(1 Credit\)](#)

The course provides students with a comprehensive understanding of emergency medical care and the skills necessary to respond in a crisis. Through a combination of lectures, hands-on training, and scenario-based simulations, students will learn how to assess and manage medical emergencies, perform CPR, use automated external defibrillators (AEDs), control bleeding, and manage respiratory and cardiac arrest.

Prerequisite: None

### Fall Semester – P1

#### [MIS 101 - Introduction to Management Information Systems \(3 Credits\)](#)

Information systems and communication technologies play a central role in today's connected business and social world. This course introduces the principles of information systems, types of information

systems, and strategies of information systems. Also, this course discusses the impacts of technology on the global business world, organizations' structure, and how people interact with each other, whether personally or in a business context. Prerequisite: None.

#### [RAD 355- Imaging Procedure II and lab \(4 credits\)](#)

This course provides students with hands-on training in non-ionizing radiation imaging procedures, specifically in the areas of ultrasonography and echocardiography. The course will focus on patient positioning and imaging protocols, including the selection of appropriate probes, optimization of signal-to-noise ratio (SNR) and modulation transfer function (MTF), as well as the use of tissue harmonics, time-of-flight (TOF), and optimal frequency selection for improved resolution. Students will also learn about different ultrasound and echocardiography imaging procedures and applications, including special needs patients and pediatrics. Prerequisite: RAD 301, RAD 305 and RAD310.

#### [RAD 362- Clinical Best Practice \(1 Credit\)](#)

This course provides students with a comprehensive understanding of the best practices and protocols used in clinical radiology settings. The course will cover various aspects of patient care and management, including patient preparation, imaging protocols, and equipment usage. Students will learn about the importance of following established guidelines and standards to ensure patient safety and produce high-quality images. The course will also cover the use of radiation protection measures and techniques to minimize patient exposure to ionizing radiation. Additionally, students will learn about effective communication with patients and peers in the workplace and the skills needed to provide safe and best standard of care in radiology services. Prerequisite: RAD 315.

#### [RAD 365 - Introduction to Radiation Therapy \(3 Credits\)](#)

This course is designed to provide students with a comprehensive overview of the principles and practices of radiation therapy (RT). The course will cover the history and evolution of radiation therapy, the role of radiation therapist, the various modalities of radiation therapy including external beam radiation therapy, brachytherapy, and systemic radiation therapy, and the clinical applications of radiation therapy in the treatment of cancer. Students will learn about the anatomy and physiology of the human body and the effects of radiation on different tissues and organs. The course will also cover the principles of radiation therapy dosimetry, conformal mapping, external beam radiation therapy, brachytherapy, proton therapy, stereotactic radiosurgery. Students will also learn about the principles of Radiation Therapy treatment planning, including image simulation, RT treatment planning, and treatment delivery. The course will provide hands-on experience with various treatment planning systems and treatment delivery equipment (Gamma Knife, Linear accelerator (LINAC), and Proton beam therapy (PBT)). The focus of the course will be on the safe and effective administration of Radiation Therapy and the importance of quality assurance in the radiation therapy and planning process. Prerequisite: PHY 241.

#### [RAD 370 - Computer Applications in Medical Imaging and Lab \(4 Credits\)](#)

This course provides students with a comprehensive understanding of computer-based image processing and analysis techniques in medical imaging. The students will learn about the different methods used for image processing and analysis, including thresholding, edge detection, morphological operations, pattern recognition, 2D/3D rendering, and region-based segmentation. They will also learn how to apply these techniques to medical imaging data of Radiography, mammography, computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography/single-photon emission computed tomography (PET/SPECT) to improve the accuracy and efficiency of diagnosis and treatment. In addition to the

theoretical concepts, students will also get hands-on experience with various software tools and programming languages used in medical imaging. They will learn how to use 3D Slicer, MATLAB, ImageJ, and other similar tools for medical image processing and analysis. Prerequisite: RAD 355.

#### Practicum I: Internship in Clinical Imaging (3 Credits)

This practical training course requires that the student spends around 135 hours of supervised experience in a medical imaging center. The course correlates the acquired academic concepts into the clinical environment, dealing directly with patients. Under the supervision of a radiologist, the student is offered the opportunity to observe and perform medical imaging of different human body parts. Clinical competency assessment and evaluations are utilized to document the clinical performance of the student. Prerequisite: RAD 355 and RAD 315.

### Spring Semester – P2

#### HCT 48x – Technical Electives (3 Credits)

##### RAD 405 - Imaging Procedures III and Lab (4 Credits)

This course focuses on the application of non-ionizing radiation imaging modalities, specifically Magnetic Resonance Imaging (MRI), in a clinical setting. The course will not cover the physics of MRI, but instead will concentrate on the practical aspects of MRI imaging procedures and patient positioning techniques. The students will learn how to select the best body RF coils, tune physical imaging parameters, maximize signal-to-noise ratio (SNR), manage, and minimize various imaging artefacts, handle special needs and pediatric patients, and set up the anesthesia in the MRI clinical environment. The course will provide hands-on experience to the students in optimizing MRI imaging sequences and protocols to achieve high-quality imaging results. Prerequisite: RAD 305.

##### RAD 410 - Special Topics in Radiological Sciences (1 Credit)

This course focuses on the latest developments in medical imaging modalities, including positron emission tomography/computed tomography (PET/CT), positron emission tomography/magnetic resonance imaging (PET/MRI), single-photon emission computed tomography/positron-emission tomography (SPECT/PET), spectral imaging, medical thermography imaging, and optical imaging. Students will gain a comprehensive understanding of these cutting-edge imaging techniques and their applications in medical diagnosis and treatment. The course will cover the principles and theories behind each modality, as well as their clinical applications, strengths, and limitations. Through a combination of lectures, hands-on laboratory experience, and case studies, students will develop the skills and knowledge necessary to effectively use these advanced imaging modalities in clinical settings. Prerequisite: RAD 365 and RAD 370.

##### RAD 420 - Radiology Quality Assurance Laboratory (1 Credit)

The course provides students with hands-on experience in performing calibration and verification procedures for X-ray radiography detectors and imaging modalities. This lab course is designed to give students a thorough understanding of the fundamental concepts and practical skills involved in ensuring quality in radiology imaging. The focus is on X-ray detector calibration and verification, which involves adjusting the detector to produce optimal image quality, and imaging modalities calibration and verification, which involves testing and adjusting the imaging equipment using radiology phantoms devices to ensure that it is operating correctly and producing accurate images. The course will deliver in-depth knowledge of the various parameters that impact image quality, such as spatial resolution, contrast resolution, and signal-to-noise ratio, and how to optimize these parameters through calibration and verification procedures. The course will also cover quality control procedures for other imaging modalities,



such as computed tomography (CT) and magnetic resonance imaging (MRI). By the end of the course, students will be equipped with the knowledge and skills needed to perform quality assurance (QA) procedures in a clinical setting. Prerequisite: RAD 355 and RAD 370.

#### **RAD 450 - Practicum II: Internship in Clinical Imaging (3 Credits)**

This course requires that the student spends around 135 hours of supervised experience in a medical imaging center. The course correlates the acquired advanced academic concepts into the clinical environment, dealing directly with patients. Under the supervision of a radiologist, the student is offered the opportunity to observe and perform medical imaging of special organs and organ systems with advanced medical imaging techniques. Prerequisite: RAD 365 and RAD 362.

#### **HCT 331 – Critical Appraisal**

is a foundational course that focuses on developing students' ability to evaluate and assess research literature. The course will provide students with the tools and skills necessary to critically evaluate research studies and determine the relevance, reliability, and validity of research findings. Students will learn how to identify different study designs, analyze data, and assess the quality of research studies. Prerequisite: None.

### **Fall Semester – P2**

#### **PSY 101 - Introduction to Psychology (3 Credits)**

This course introduces the principles of psychology. It considers sensation, perception, cognition, learning, physiological psychology, personality, development, psychopathology, social psychology, methodology, assessment, and history of psychology with an emphasis on how the science of psychology impacts everyday life. Prerequisites: None

#### **HCT 48x – Technical Elective (3 Credits)**

##### **Radiographic Anatomy and Pathology II (3 Credits)**

This course focuses on Magnetic Resonance Imaging and Ultrasound Imaging (MRI) and is designed to provide students with a comprehensive understanding of the anatomy and pathology of the human body as they relate to medical imaging generated with these modalities. Students will learn the indications and limitations of MRI and Ultrasound imaging, as well as the normal anatomy and common pathologies that can be imaged using these modalities. They will also learn the various imaging techniques used in MRI and Ultrasound imaging, including pulse sequences, imaging planes, and image optimization. Prerequisite: RAD 310.

#### **RAD 480 - Radiology Information Systems (1 Credit)**

In this course, students will delve into the fundamental concepts of health information technology and their application in the radiology field. The students will engage in a range of learning activities that encourage critical thinking, analysis, and application of course content. The course will cover topics such as computer systems in radiology, the use of Health Level Seven International (HL7) interfaces, Health Insurance Portability and Accountability Act (HIPAA), Digital Imaging and Communication in Medicine

(DICOM) protocols, and radiology database structures, management and storage, electronic health records, Picture Archiving and Communication S(PACS), and radiology information systems (RIS). The course will also include hands-on training and case studies to provide students with practical experience in utilizing radiology information systems. Prerequisite: MIS 101 and RAD 370.

#### [RAD 490 - Practicum III: Internship in Clinical Imaging \(3 Credits\)](#)

This course requires that the senior student spends around 135 hours of supervised experience in a medical imaging center. The student is offered the opportunity to continue to develop his/her clinical competencies by performing, under the supervision of a radiologist, medical imaging examinations with emphasis on advanced modalities and techniques. Prerequisite: RAD 420.

#### [RAD 460 - Nuclear Medicine Imaging \(3 Credits\)](#)

This course is designed to introduce students to the field of nuclear medicine, a subspecialty of radiology that uses small amounts of radioactive material to diagnose and treat various diseases and conditions. The course covers the physical principles, concepts, and applications of nuclear medicine imaging, including the use of radiopharmaceuticals, nuclear imaging instrumentation, and various imaging techniques such as single-photon emission computed tomography (SPECT) and positron emission tomography (PET). Prerequisite: PHY 241.

### Technical Electives

#### [HCT 480 - Marketing in the Healthcare Sector \(3 Credits\)](#)

The course on marketing in the healthcare sector is designed to provide students with a comprehensive understanding of the marketing principles and their application in the healthcare industry. The course will cover various aspects of healthcare marketing such as market research, consumer behavior, branding, product development, pricing, distribution, and promotion. Students will learn how to apply marketing concepts to real-world healthcare scenarios, including the marketing of medical devices, pharmaceuticals, hospitals, and other healthcare services. The course will also cover regulatory considerations and ethical issues in healthcare marketing. The goal of this course is to equip students with the knowledge and skills required to develop and execute effective marketing strategies in the healthcare sector. Prerequisite: None.

#### [HCT 481 - Health Informatics \(3 Credits\)](#)

This course describes the fundamental principles, concepts, and technological elements that make up the building blocks of Health Informatics. The course introduces fundamental characteristics of data, information, and knowledge in the domain, the common algorithms for health applications, and IT components in representative clinical processes. It also introduces the conceptual framework for handling the collection, storage, and the optimal use of biomedical data, as well as the concepts of population health and precision medicine and the information systems that support them. Emphasis is on the basic principles of knowledge management systems in biomedicine, various aspects of Health Information Technology standards, and IT aspects of clinical process modeling. Prerequisite: None.

#### [HCT 482 - Leadership in Healthcare \(3 Credits\)](#)

This course provides students with an in-depth understanding of the principles and practices of leadership within healthcare. Students will learn about the various leadership styles, strategies, and theories and how they can be applied in the field of radiologic sciences. Through interactive lectures, group discussions, and

case studies, students will learn how to develop their leadership skills, communicate effectively, build and lead teams, manage change, and handle challenges in the workplace. The course will also cover the importance of ethical leadership, diversity, and inclusion in the workplace. This course is designed for students who wish to take on leadership roles in the radiologic sciences or pursue careers in management, administration, or education. By the end of the course, students will have a strong foundation in the principles and practices of leadership and will be well-equipped to apply their skills and knowledge in their future careers. Prerequisite: None.

#### [HCT 483 - Introduction to Clinical Research \(3 Credits\)](#)

This course provides an overview of the fundamental concepts, principles, and practices involved in clinical research and research works involving human subjects. The course covers the process of designing, conducting, and analyzing clinical research, with a focus on ethical considerations, human subject protection, regulatory requirements, and the impact of clinical research on healthcare delivery and patient outcomes. Documentations required in clinical research will be described, and responsibilities of agencies and organizations responsible for human subject protection will be identified.

Throughout the course, students will learn about the different types of clinical research studies, including observational, interventional, and registry studies. They will also learn about the key components of a clinical study protocol, including eligibility criteria, randomization, and blinding. Prerequisite: HCT 331.

