

Academic Programs Booklet

College of Health and Sport Sciences

2025



Prepared By: VP For Academic Programs and Graduate Studies Office

College of Health and Sport Sciences

Bachelor of Science in Radiologic Technology (Diagnostic)

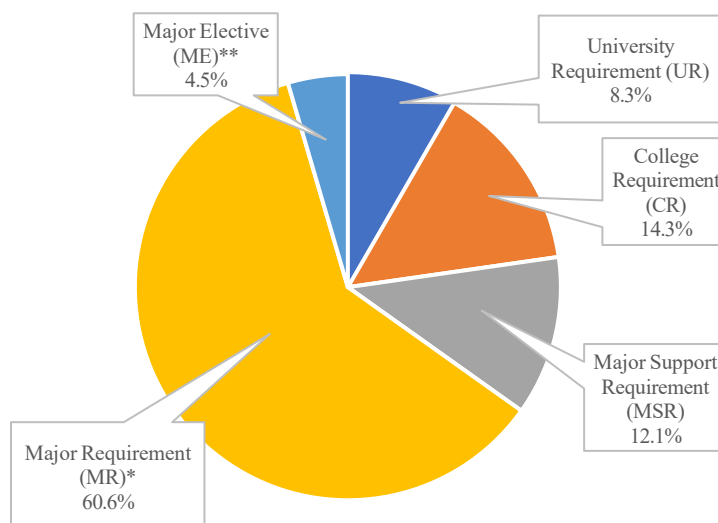
Program Components

Course Type	CRD
University Requirement (UR)	11
College Requirement (CR)	19
Major Support Requirement (MSR)	20
Major Requirement (MR)*	77
Major Elective (ME)**	06
Total Program Credit (CRD)	133

Total Clinical Training Credits: 28

*Including Clinical Training

**Student should select two courses from the Major Elective (ME) list



Teaching Language: English

Detailed Study Plan

Year 1 – Semester 1

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
ENG115	English for the Healthcare Professionals I	2	2	0	3	CR	-	No
HIST122	Modern History of Bahrain and Citizenship	3	0	0	3	UR	-	No
ISLM101	Islamic Culture	3	0	0	3	UR	-	No
RAD102	Introduction to Radiology	3	0	0	3	MR	-	Yes
Total Credits					12			

Year 1 – Semester 2

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD104	Hospital Practice and Care of Patients	3	2	0	4	MR	-	Yes
LFS118	Anatomy and Physiology I	3	2	0	4	MSR	-	No
LFS217	Microbiology	3	0	0	3	CR	-	No
CGS201	X-Ray Physics I	2	0	0	2	MSR	-	No
ARAB110	Arabic Language Skills	3	0	0	3	UR	-	No
Total Credits					16			

Year 2 – Semester 3

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD206	Fundamentals of Imaging	3	2	0	4	MR	-	Yes
CGS202	X-Ray Physics II	2	0	0	2	MSR	CGS201	No
ENG125	English for the Healthcare Professionals II	2	2	0	3	CR	ENG115	No
PH222	Biostatistics	2	2	0	3	CR	-	No
LFS128	Anatomy and Physiology II	3	2	0	4	MSR	LFS118	No
Total Credits					16			

Year 2 – Semester 4

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD217	Radiography I	4	2	0	5	MR	LFS128, RAD206	Yes
RAD227	Clinical Skills I	0	0	15	5	MR	RAD206	Yes
PHAM321	Pharmacology for Radiology	2	0	0	2	MSR	LFS128	No
LFS227	Pathophysiology	4	0	0	4	CR	LFS128	No
RAD33x	Major Elective I	2	2	0	3	ME	CGS202 LFS128	Yes
Total Credits					19			

Year 3 – Semester 5

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD316	Radiography II	4	2	0	5	MR	RAD217 RAD227	Yes
RAD326	Clinical Skills II	0	0	15	5	MR	RAD227 (RAD316 co-Req.)	Yes
SBS316	Fundamentals of Sociology and Psychology	3	0	0	3	MSR	-	No
RAD33x	Major Elective II	2	2	0	3	ME	CGS202 LFS128	Yes
HRLC107	Human Rights	2	0	0	2	UR	-	No
Total Credits					18			

Year 3 – Semester 6

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD331	Computerized Tomography	2	2	0	3	MR	RAD316	Yes
RAD341	Radiology Quality Control	3	0	0	3	MR	CGS202 RAD206	Yes
RAD319	Advanced Imaging I	3	2	0	4	MR	RAD316	Yes
RAD329	Clinical Skills III	0	0	15	5	MR	RAD316	Yes
SBS320	Research Methods	2	2	0	3	CR	PH222	No
Total Credits					18			

Year 4 – Semester 7

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD411	Graduation Project I	0	4	0	2	MR	SBS320	Yes
RAD418	Image Interpretation and Evaluation	2	2	0	3	MR	RAD316	Yes
RAD419	Advanced Imaging II	3	2	0	4	MR	RAD319	Yes
RAD429	Clinical Skills IV	0	0	15	5	MR	RAD329	Yes
RAD431	Radiobiology	3	0	0	3	MR	RAD341	Yes
Total Credits					17			

Year 4 – Semester 8

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD412	Graduation Project II	0	4	0	2	MR	RAD411	Yes
RAD430	Advanced Imaging III	3	2	0	4	MR	RAD419	Yes
RAD480	Field Practice	0	0	24	8	MR	RAD419 RAD429	Yes
HCA301	Leadership and Management in Healthcare Setting	3	0	0	3	MSR	-	No
Total Credits					17			

List of Major Elective Courses (Student select only 2 Electives)

Course Code	Course Title	Course Hours				Course Type	Pre-Requisite	Major GPA
		Lec.	Prac.	Clinical	Crdt.			
RAD330	Fundamentals of Magnetic Resonance Imaging	2	2	0	3	ME	CGS202 LFS128	Yes
RAD335	Fundamentals of Dental and Oral Imaging	2	2	0	3	ME	CGS202 LFS128	Yes
RAD336	Fundamentals of Radionuclide Imaging	2	2	0	3	ME	CGS202 LFS128	Yes
RAD337	Fundamentals of Forensic Imaging	2	2	0	3	ME	CGS202 LFS128	Yes
RAD338	Fundamentals of Ultrasonography	2	2	0	3	ME	CGS202 LFS128	Yes
RAD339	Fundamentals of Breast Imaging	2	2	0	3	ME	CGS202 LFS128	Yes

NB:

- The passing Grade for the **(MR or ME)** RAD courses is **C**.
- The passing Grade for the Other **MSR, CR, and UR** courses is **D**.

Course Descriptions

Course Code:	ENG115	Course Title:	English for the Healthcare Professionals I	Cr: 3
Course Description:	Develop the language skills of reading, listening, speaking, and writing, with a focus on meeting the language needs of healthcare professionals. Examine verbal and non-verbal communication skills, including extracting ideas, paraphrasing, writing in APA style and guidelines, and writing assessment reports. Comprehend medical terminologies, prefixes, suffixes, and word roots.			
Course Code:	HIST122	Course Title:	Modern History of Bahrain and Citizenship	Cr: 3
Course Description:	الشخصية المكانية للبحرين، مختصر تاريخ البحرين حتى القرن الثامن عشر ميلادي والجذور التاريخية لتكوين الهوية الوطنية للبحرين منذ القرن الثامن عشر الميلادي، الدولة الحديثة وتطور الحياة الدستورية في البحرين، البعد العربي والإسلامي في هوية البحرين، القيم الأساسية لمجتمع البحرين وحقوق المواطنة (القانونية والسياسية والمدنية والاقتصادية)، المسؤوليات والواجبات والمشاركة المجتمعية، التطور الاقتصادي والتنمية في البحرين، العلاقات الخليجية والعربية والدولية للبحرين.			
Course Code:	ISLM 101	Course Title:	Islamic Culture	Cr: 3
Course Description:	دراسة لمفهوم الثقافة الإسلامية، وبيان مصادرها من القرآن والسنة والاجتهاد، وبيان أهم ركائزها من العقيدة والعبادة والأخلاق، وأهم النظم الإسلامية، كالنظام الاجتماعي والاقتصادي والسياسي، مع التركيز على موقف الثقافة الإسلامية من أهم قضايا العصر مثل: قضية الإرهاب والتطرف، وقضية الحوار.			
Course Code:	RAD 102	Course Title:	Introduction to Radiology	Cr: 3
Course Description:	Orientation to the healthcare system in the Kingdom of Bahrain and its structure, including radiologic technologists' clinical, ethical, and legal responsibilities. Emphasizing the characteristics of waves and radiation and the risks of ionizing radiation. Site visits provide an overview of the radiology department environment and setup.			
Course Code:	RAD 104	Course Title:	Hospital Practice and Care of Patients	Cr: 4
Course Description:	Focuses on patient care and welfare in the Radiology Department, emphasizing care during basic and special radiologic procedures. It includes rules, regulations, and practices for radiation protection, infection control, and sterilization.			
Course Code:	LFS118	Course Title:	Anatomy and Physiology I	Cr: 4
Course Description:	The course covers the organization of the human body, including the structure and function of cells, tissues, and organs. It also includes the gross and microscopic anatomy and physiology of the integumentary, skeletal, muscular, blood, cardiovascular, and lymphatic systems.			
Course Code:	LFS217	Course Title:	Microbiology	Cr: 3
Course Description:	Introduce the basic concepts of microbiology, with a special emphasis on microbial ecology, epidemiology, and the pathogenesis of infectious diseases. As healthcare professionals, you will be equipped to apply the concepts of microbial growth control to prevent the spread of infections in both daily life and the professional field.			
Course Code:	CGS201	Course Title:	X-Ray Physics I	Cr: 2
Course Description:	Presents the physical principles underlying Radiology Technology, emphasizing the laws governing electric and magnetic fields and the characteristics of electromagnetic energy. Describes regions of the electromagnetic spectrum and explains how radiation interacts with matter.			

Course Code:	ARAB110	Course Title:	Arabic Language Skills	Cr: 3
Course Description:	دراسة أساسيات اللغة العربية، صياغة، وتركيباً، ومعجماً، ودلالة، ومعالجة أساليبها قراءةً وتذوقاً، ونقداً، وبيان خصائصها الجمالية وقيمها الدلالية والتعبيرية، من خلال نصوص تتناول مختلف الأجناس الأدبية شعراً ونثراً.			
Course Code:	RAD206	Course Title:	Fundamentals of Imaging	Cr: 4
Course Description:	Introduce the principles of image quality assessment and the formation and recording of radiologic images in conventional and digital imaging systems.			
Course Code:	CGS202	Course Title:	X-Ray Physics II	Cr: 2
Course Description:	A continuation of CGS-201 explores X-ray tube components, the production of characteristic and bremsstrahlung X-rays, the different interactions of X-rays with matter, and their applications in imaging. Focuses on types of filtrations and factors that affect the quantity and quality of the X-ray beam.			
Course Code:	ENG125	Course Title:	English for the Healthcare Professionals II	Cr: 3
Course Description:	Apply the language and communication skills of reading, listening, speaking, and writing at a higher level. Adopt critical reading skills, inferential comprehension, analytical report writing, and a research essay based on medical terminologies and the APA style and guidelines.			
Course Code:	PH222	Course Title:	Biostatistics	Cr: 3
Course Description:	Descriptive statistics, some basic probability concepts, discrete and continuous probability distribution, estimations, hypothesis testing: one and two sample inference, analysis of variance, inference of categorical data, Simple linear and multiple regression and correlation, logistic regression, use of statistical packages.			
Course Code:	LFS128	Course Title:	Anatomy and Physiology II	Cr: 4
Course Description:	The course covers gross and microscopic anatomy and physiology of the nervous, special senses, endocrine, respiratory, digestive, urinary, and reproductive systems.			
Course Code:	RAD217	Course Title:	Radiography I	Cr: 5
Course Description:	Provides knowledge of radiographic positioning and practices of skeletal radiography, including imaging of the chest, bony thorax, upper and lower extremities, shoulder and pelvic girdles, and vertebral column.			
Course Code:	RAD227	Course Title:	Clinical Skills I	Cr: 5
Course Description:	Develops the necessary skills and attitudes to perform radiographic examinations covered in the Radiography I course (RAD 217), following recognized professional standards and using standard evaluation criteria for all produced images while meeting the patient's healthcare needs. Faculty members and clinical preceptors supervise all clinical procedures.			
Course Code:	PHAM321	Course Title:	Pharmacology for Radiology	Cr: 2
Course Description:	Introduces basic pharmacology knowledge relevant to radiology practice, exploring the pharmacology of major drug classifications, including their uses and adverse reactions as applied to radiology procedures.			
Course Code:	LFS227	Course Title:	Pathophysiology	Cr: 4
Course Description:	Cover the basic pathophysiology of disease processes, their clinical manifestations, complications, diagnostic findings, and management. You will also acquire knowledge to provide better disease management and apply critical thinking and analytical methods of inquiry regarding the disease processes.			

Course Code:	RAD316	Course Title:	Radiography II	Cr: 5
Course Description:	A continuation of the Radiography I course (RAD 217), this course covers details of radiographic positioning techniques for skeletal radiography and special radiologic procedures, including imaging of the skull, paranasal sinuses, alimentary, urinary, biliary, respiratory, central nervous, and musculoskeletal systems.			
Course Code:	RAD326	Course Title:	Clinical Skills II	Cr: 5
Course Description:	A continuation of RAD 217. Develops the necessary skills and attitudes to perform the radiographic examinations covered in RAD 217 and RAD 316 per recognized professional standards using standard evaluation criteria for all produced images while always meeting the patient's health care needs. Faculty members and clinical preceptors supervise all clinical procedures.			
Course Code:	SBS316	Course Title:	Fundamentals of Sociology and Psychology	Cr: 3
Course Description:	Familiarize students with the basic concepts and theories in Sociology and Psychology. This will enable the allied health graduate to recognize the various societal forces and aspects of human behavior that control human interactions. It will also help the graduate develop a holistic perception of healthcare needs and services.			
Course Code:	RAD319	Course Title:	Advanced Imaging I	Cr: 4
Course Description:	Develops the necessary knowledge and skills to perform advanced imaging procedures, including imaging of salivary and lacrimal systems, pediatric radiography, bone mineral densitometry, conventional tomography, and Ortho roentgenography.			
Course Code:	HRLC107	Course Title:	Human Rights	Cr: 2
Course Description:	دراسة ماهية حقوق الإنسان ومصادرها الدولية والوطنية، وأنواع الحقوق المحمية: المدنية والسياسية والاقتصادية والاجتماعية والثقافية وتطبيقاتها في مملكة البحرين، بالإضافة إلى دراسة آليات مراقبة حقوق الإنسان الدولية والوطنية ويتضمن المقرر إنجازات مملكة البحرين في مجال حقوق الإنسان من خلال بيان وتعريف الطلبة بأجهزتها الحقوقية.			
Course Code:	RAD329	Course Title:	Clinical Skills III	Cr: 5
Course Description:	A continuation of previous clinical courses. Concentrates on building the skills necessary to perform advanced radiologic procedures covered in the Advanced Imaging (I) course, following professional standards using standard evaluation criteria for all produced images while meeting the patient's health care needs. Faculty members and clinical preceptors supervise all clinical procedures.			
Course Code:	RAD331	Course Title:	Computerized Tomography	Cr: 3
Course Description:	Enable the study of computerized tomography imaging, including its physical principles, instrumentation, image quality, safety considerations, clinical applications, common procedures, and protocols.			
Course Code:	SBS320	Course Title:	Research Methods	Cr: 3
Course Description:	Introduce the research process, including the necessary methodology, types of research, sampling techniques, and data collection methods. The primary objective of this course is to equip students with the fundamental knowledge and skills necessary for their academic and professional development. Further, developing a research proposal will apply this knowledge and these skills.			
Course Code:	RAD341	Course Title:	Radiology Quality Control	Cr: 3

Course Description:	Provides the fundamental applications of Quality Control and Quality Assurance in the radiology department, emphasizing areas encountered by new graduates, the importance of quality in medical settings, and the impact of quality control and equipment management.			
Course Code:	RAD419	Course Title:	Advanced Imaging II	Cr: 4
Course Description:	Provides the necessary knowledge and skills for performing advanced imaging procedures in medical emergencies, trauma radiography, surgical radiography, digital fluoroscopy, and brain imaging.			
Course Code:	RAD429	Course Title:	Clinical Skills IV	Cr: 5
Course Description:	A continuation of previous clinical courses builds the necessary skills for advanced radiology procedures, with an emphasis on trauma, emergency patients, and the principles and applications of advanced imaging modalities and methods. Direct supervision is provided by program faculty, clinical instructors, and preceptors.			
Course Code:	RAD418	Course Title:	Image Interpretation and Evaluation	Cr: 3
Course Description:	Provides key principles for evaluating radiology images, including normal anatomy, common pathologies, and technical quality. It also focuses on interpretation skills and implementing the "red-dot" system in traumatic and non-traumatic radiographic procedures.			
Course Code:	RAD411	Course Title:	Graduation Project I	Cr: 2
Course Description:	Supports selecting a professionally relevant research topic under faculty guidance, culminating in submitting a research proposal and preparing a comprehensive literature review related to the selected topic as a foundation for the main graduation project.			
Course Code:	RAD431	Course Title:	Radiobiology	Cr: 3
Course Description:	Cover the principles and concepts underlying the biological effects of ionizing radiation on living organisms at the molecular, cellular, organ, and whole-body levels. It addresses both low-energy and high-energy radiation levels, as well as early acute effects and late or hereditary effects, highlighting the importance of radiation protection.			
Course Code:	RAD430	Course Title:	Advanced Imaging III	Cr: 4
Course Description:	Provides the necessary knowledge and skills for performing advanced imaging procedures in angiography and interventional radiology. Emphasizes the roles of interventional and angiography team members and introduces artificial intelligence applications in radiology.			

Course Code:	RAD412	Course Title:	Graduation Project II	Cr: 2
Course Description:	A continuation of Graduation Project I . Emphasizes research collaboration, applying the correct methodology, data collection, and interpretation of results, formalizing thesis recommendations and presenting final findings."			
Course Code:	RAD480	Course Title:	Field Practice	Cr: 8
Course Description:	A 24-hour field practice per week in the radiology department, emphasizing the technical and clinical skills necessary to function as a competent radiologic technologist under minimal supervision. Enables the practice of radiologic procedures and assumes full responsibility in clinical settings as Part of the Radiology team.			

Course Code:	HCA301	Course Title:	Leadership and Management in Healthcare Setting	Cr: 3
Course Description:	Covering management functions and leadership principles as applied in healthcare settings, exploring the principles of organizational theory and behavioral aspects of management across various settings, and cultivating the knowledge, skills, and attributes for effective leadership, decision-making, team motivation, managing stress and time, and workplace planning and organization.			

Elective Courses

Course Code:	RAD330	Course Title:	Fundamentals of Magnetic Resonance Imaging	Cr: 3
Course Description:	Provide the fundamentals of magnetic resonance imaging techniques, including principles, applications, instrumentation, safety considerations, sectional anatomy, common artifacts, and the applications of basic imaging procedures and protocols.			
Course Code:	RAD335	Course Title:	Fundamentals of Dental and Oral Imaging	Cr: 3
Course Description:	Provide the fundamental knowledge and practical understanding required for performing dental and oral imaging. Topics include dental and oral imaging instrumentation, principles and practices of radiation protection and safety, various radiology imaging techniques, quality assurance procedures, and the principles of dental image interpretation.			
Course Code:	RAD336	Course Title:	Fundamentals of Radionuclide Imaging	Cr: 3
Course Description:	Provide the fundamental knowledge underpinning physical principles, instrumentation, technological advances, clinical applications, common radionuclide imaging procedures, Single-Photon Emission Computed Tomography (SPECT) and Positron Emission Tomography (PET/CT).			
Course Code:	RAD337	Course Title:	Fundamentals of Forensic Imaging	Cr: 3
Course Description:	Provide the fundamental knowledge base for forensic science and forensic imaging, fostering the role of various radiology imaging modalities in support of both medical and non-medical forensic purposes, as well as the role of radiology staff within legal contexts.			
Course Code:	RAD338	Course Title:	Fundamentals of Ultrasonography	Cr: 3
Course Description:	Provide the fundamentals of sonographic imaging techniques, including instrumentation, patient care, safety, and the basics of sonographic image interpretation.			
Course Code:	RAD339	Course Title:	Fundamentals of Breast Imaging	Cr: 3
Course Description:	Provide the fundamentals of mammography and breast imaging, including its principles, applications, instrumentation, safety considerations, and the application of common procedure protocols.			