## A brief Course Description

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| **Course Name** | CT Protocols and Techniques |
| **Course Code** | RDI 311 |
| **College** | College of Health and Rehabilitation Science |
| **Department/ Program** | Radiological Sciences / Diagnostic Imaging |
| **Year / Level:** | 3rd Year / 1st Semester |
| **Credit Hours** | 3 HOURS ( 2+0+1) |
| **Contact Hours** | **Lecture:** 24    **Lab/Tutorial** none    **Training:** 48 |
| **Language** | English |
| **Track** | Department Requirement |
| **Pre-requisites Course:** | RAD 222 - Computed Tomography <br> RAD 211 - Introduction to Radiation Physics |
| **Co-Requests:** | None |
| **Course Objectives:** | **After completing the course, the students should be able to**: <br> - To describe protocol for CT examinations <br> - To describe imaging technique for each organ/ region to match the criteria for diagnostic image <br> - To identify the artefacts on the CT image, find out cause and suggest modification in technique to eliminate it <br> - To identify the normal anatomy and pathological lesion on the CT image. <br> - To Perform CT procedures under supervision and guidance of qualified CT specialist |

## A brief Course Description

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| **Course Name** | CT and MRI Cross-Sectional Anatomy and Pathology I |
| **Course Code** | RDI 312 |
| **College** | College of health and rehabilitation science |
| **Department/ Program** | Radiological Sciences Dept. (Diagnostic Imaging ) |
| **Year / Level:** | 1st Semester 3rd Year |
| **Credit Hours** | 2+1+0= 3 |
| **Contact Hours** | **Lecture: 30** **Lab/Tutorial: NA** **Training:30** |
| **Language** | **English** |
| **Track** | Department Requirement |
| **Pre-requisites Course:** | • Human Anatomy and Physiology (1) HRS 112 <br> • Human Anatomy and Physiology (2) HRS 113 <br> • Basic Radiographic Technique RDI 221 |
| **Co-Requests:** | **None** |
| **Course Objectives:** | • This course enable students to review the anatomy of head and neck  as well as the spine and give them a good knowledge about cross sectional anatomy and common pathology of head and neck by CT and MRI image. <br><br> Upon successful completion, the student will be able to: <br> • Determine cross sectional anatomy of  head and neck and spine by CT and MRI <br> • Define common pathology of head and neck and spine on CT and MRI images |

## A brief Course Description

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|---|---|
| **Course Name** | Radiation Safety, Dosimetry and Management |
| **Course Code** | RDI 313 |
| **College** | College of health and rehabilitation science |
| **Department/ Program** | Radiological Sciences Dept. (Diagnostic Imaging ) |
| **Year / Level:** | 1st Semester 3rd Year |
| **Credit Hours** | 2+0+1 = 3 |
| **Contact Hours** | **Lecture: 24**   **Lab/Tutorial: NA**   **Training:12** |
| **Language** | English |
| **Track** | Department Requirement |
| **Pre-requisites Course:** | RAD 211 Introduction to Radiation Physics |
| **Co-Requests:** | None |
| **Course Objectives:** | Students in this course will learn a broad knowledge on the:<br>- Effect of ionizing radiation on tissue (Stochastic and Deterministic Effects)<br>- Deterministic thresholds, overdose and risk versus benefits<br>- Dose assessment of patient, typical entrance doses from radiation in different procedures, from radiation in different system technologies and dose rate versus technical factors<br>- Dose assessment of pregnant and pediatric patients<br>- Dose assessment of operator and work load<br>- ALARA concept, radiation safety information system, dose and radiation monitoring and dose reduction methods.<br><br>After completing the course, the students should be able:<br>- To differentiate between the effects of ionizing radiation on tissue (Stochastic and Deterministic Effects)<br>- To avoid the deterministic thresholds and overdose and manage the risk versus benefits<br>- To manage the introduction of minimum dose required for dictate-able image quality<br>- To manage dose level for pregnant and pediatric patients<br>- To apply ALARA concept and apply all means to reduce radiation levels at working environment |

## A brief Course Description

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|---|---|
| **Course Name** | MRI Physics and Technology |
| **Course Code** | RDI 314 |
| **College** | College of health and rehabilitation science |
| **Department/ Program** | Radiological Sciences Dept. (Diagnostic Imaging ) |
| **Year / Level:** | 1st Semester 3rd Year |
| **Credit Hours** | 2+0+1 = 3 |
| **Contact Hours** | **Lecture: 24**    **Lab/Tutorial: NA**    **Training:12** |
| **Language** | **English** |
| **Track** | Department Requirement |
| **Pre-requisites Course:** | HRS 113, RAD 223 |
| **Co-Requests:** | **None** |
| **Course Objectives:** | Recognizing the physical theory of MRI<br>- Recognizing the MRI scanner components<br>- Demonstrating the method of image formation in MRI<br>- Identifying the all required parts of MRI tools to form MRI image<br>- Gain basic knowledge and concept on image formation and image processing and techniques in MRI<br>- Develop understanding on the components, operation and applications of MRI<br>- Identifying the factors that affect MRI image quality and image and dose optimization environment<br><br>After completing the course, the students should be able:<br>- To explain the physics of MRI<br>- To identify MRI scanner components<br>- To explain how image is being formed in MRI imaging<br>- To identify the image artifacts and how avoid it or correct it in MRI image<br>- To apply the safety procedures and rules in side MRI scanning room |

## A brief Course Description

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|---|---|
| **Course Name** | Patient Care and Management in Radiology |
| **Course Code** | RDI 315 |
| **College** | College of Health and Rehabilitation Science |
| **Department/ Program** | Radiological Sciences / Diagnostic Imaging |
| **Year / Level:** | 3rd Year / 1st Semester |
| **Credit Hours** | 3 HOURS ( 2+0+1) |
| **Contact Hours** | **Lecture:** 30 **Lab/Tutorial** 30 **Training:** |
| **Language** | English |
| **Track** | Department Requirement |
| **Pre-requisites Course:** | RDI 221 - Basic radiographic Techniques |
| **Co-Requests:** | None |
| **Course Objectives:** | **After completing the course, the students should be able to**:<br>•Acquire the necessary knowledge and practical skills in care of patient.<br>•Assess the patient's vital signs.<br>•Apply the necessary method of moving the patient_<br>•Understand the different types of shocks and reactions.<br>•Properly deal with infected patients.<br>•Understand risks and hazards in the Radiology department.<br>• Properly handle sterilized objects. |

## A brief Course Description

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| **Course Name** | Interventional Radiology |
| **Course Code** | RDI 316 |
| **College** | College of Health and Rehabilitation Science |
| **Department/ Program** | Radiological Sciences / Diagnostic Imaging |
| **Year / Level:** | 3rd Year / 1st Semester |
| **Credit Hours** | 3 HOURS ( 2+0+1) |
| **Contact Hours** | **Lecture:** 30 **Lab/Tutorial** 30 **Training:** |
| **Language** | English |
| **Track** | Department Requirement |
| **Pre-requisites Course:** | RDI 221 - Basic radiographic Techniques, RDI 222 |
| **Co-Requests:** | None |
| **Course Objectives:** | **After completing the course, the students should be able to**: Memorize normal anatomy of arteries and veins, and applied them on angiographic images <br> • Memorize anatomy of spinal cord and lymphatic system and applied them on mylographic and lymphatic images. <br> • Recognize equipments and instruments used for angiography, lymphography and myelography. <br> • Explain seldinger technique in details <br> • Differentiate between conventional and digital subtracted angiographic images <br> • Understand Interventional angiography and its therapeutic role. <br> • Identify abnormal findings on radiographs for common pathology of arteries and veins. |