



A brief Course Description

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| Course Name | Research Project (1) | | |
| Course Code | RDI 411 | | |
| College | College of Health and Rehabilitation Sciences / | | |
| Department/ Program | Radiological Sciences | | |
| Year / Level: | 4/7 | | |
| Credit Hours | 2+0+0=2 | | |
| Contact Hours | Lecture: 24 | Lab/Tutorial | Training: |
| Language | English | | |
| Track | Department Requirement | | |
| Pre-requisites Course: | biostatistics | | |
| Co-Requests: | NONE | | |
| Course Objectives: | <p>Upon successful completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> ○ Discuss the purpose of research. ○ Compare and contrast different types of research including qualitative and quantitative research, applied research and experimental and non-experimental research. | | |



A brief Course Description

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|-------------------------------|--|-------------------------|---------------------|
| Course Name | Clinical Practicum (III) | | |
| Course Code | RDI 412 | | |
| College | College of health and rehabilitation science | | |
| Department/ Program | Radiological Sciences Dept. (Diagnostic Imaging) | | |
| Year / Level: | 1st Semester 4th Year | | |
| Credit Hours | 1+0+2= 3 | | |
| Contact Hours | Lecture: 13 | Lab/Tutorial: NA | Training:104 |
| Language | English | | |
| Track | Department Requirement | | |
| Pre-requisites Course: | MRI Sequence And Technique RDI 325 CLINICAL PRACTICUM 2 RDI 321 | | |
| Co-Requests: | None | | |
| Course Objectives: | <ul style="list-style-type: none"> - Identifying the MRI scanner components and tools required to form MR image - Gaining the knowledge of sequence optimization and identifying factors affecting MR image quality - Recognizing advanced protocol generation - Develop understanding of the operation and applications of MRI <p>After completing the course, the students should be able to:</p> <ul style="list-style-type: none"> - To explain how to create MRI advance sequences - To identify main parameters in MRI advance sequence - To identify the challenges of advance MRI sequences - To apply safety procedures and rules required inside MRI scanning room | | |



A brief Course Description

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|-------------------------------|---|--------------------------|--------------------|
| Course Name | Quality Assurance in Diagnostic Radiology I | | |
| Course Code | RDI 413 | | |
| College | College of Health and Rehabilitation Science | | |
| Department/ Program | Radiological Sciences / Diagnostic Imaging | | |
| Year / Level: | 4 th Year / 1 st Semester | | |
| Credit Hours | 3 HOURS (2+0+1) | | |
| Contact Hours | Lecture: 24 | Lab/Tutorial None | Training: 6 |
| Language | English | | |
| Track | Department Requirement | | |
| Pre-requisites Course: | RDI 311, RDI 325 | | |
| Co-Requests: | None | | |
| Course Objectives: | <ul style="list-style-type: none"> • Gaining basic knowledge and concept on QA/QC and its importance in clinical applications of radiation. • Develop understanding of the quality control tests and standards for CT and MRI. • Recognizing CT dosimetry and CT to do optimization. • Gain the knowledge on evaluation of QC test results and rectifying problems. | | |



A brief Course Description

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|-------------------------------|---|--------------------------|---------------------|
| Course Name | Advanced MRI procedures | | |
| Course Code | RDI 414 | | |
| College | College of Health and Rehabilitation Science | | |
| Department/ Program | Radiological Sciences / Diagnostic Imaging | | |
| Year / Level: | 4 th Year / 1 st Semester | | |
| Credit Hours | 3 HOURS (2+0+1) | | |
| Contact Hours | Lecture: 24 | Lab/Tutorial None | Training: 12 |
| Language | English | | |
| Track | Department Requirement | | |
| Pre-requisites Course: | MRI Sequence And Technique - RDI 325 | | |
| Co-Requests: | None | | |
| Course Objectives: | <ul style="list-style-type: none"> - Identifying the MR scanner components and tools required to apply MR advance procedures. - Gaining the knowledge of sequence optimization and identifying factors affecting MR image quality. - Recognizing advanced protocol generation. - Develop understanding of the operation and applications of MR advanced techniques. | | |



A brief Course Description

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|------------------------|--|--------------|--------------|
| Course Name | Image Processing And 3D Technique | | |
| Course Code | <u>RDI 415</u> | | |
| College | College of Health and Rehabilitation Sciences / | | |
| Department/ Program | Radiological Sciences | | |
| Year / Level: | 4/7 | | |
| Credit Hours | 2+0+1=3 | | |
| Contact Hours | Lecture: 24 | Lab/Tutorial | Training: 30 |
| Language | English | | |
| Track (Select) | Department Requirement | | |
| Pre-requisites Course: | RDI 323, RDI 325 | | |
| Co-Requests: | NONE | | |
| Course Objectives: | <p>The objective of this course is to provide students with an overview of the computational and mathematical methods in medical image processing. The course covers the main sources of medical imaging data (CT, MRI, PET, and ultrasound). We will study many of the current methods used to enhance and extract useful information from medical images. A variety of radiological diagnostic scenarios will be used as examples to motivate the methods.</p> | | |



A brief Course Description

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|------------------------|--|--------------|--------------|
| Course Name | Image Interpretation | | |
| Course Code | <u>RDI 416</u> | | |
| College | College of Health and Rehabilitation Sciences / | | |
| Department/ Program | Radiological Sciences | | |
| Year / Level: | 4/7 | | |
| Credit Hours | 2+0+1=3 | | |
| Contact Hours | Lecture: 24 | Lab/Tutorial | Training: 30 |
| Language | English | | |
| Track | Department Requirement | | |
| Pre-requisites Course: | RDI 323, RDI 325 | | |
| Co-Requests: | NONE | | |
| Course Objectives: | <p>The objective of this course is to provide students with an overview of the fundamental concepts of low and high level image processing algorithms used in medical image analysis (such as those that occur in MRI, CT imaging). Also describe the basic review of image acquisition, through low level processing to high level object extraction and recognition: Image enhancement, restoration, filtering, segmentation, morphology, texture, presentation & description, compression, recognition & interpretation, and registration</p> | | |