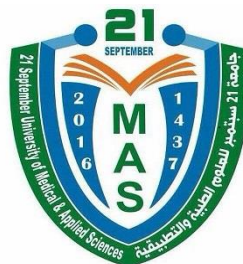


**Republic of Yemen**  
**Ministry of Education & Higher Research**  
**Council of Academic Accreditation & Quality Assurance of**  
**Higher Education (CAQA)**



**21 september University of Medical  
and Applied Science**



**Faculty of Applied Medical Science**

Department of **Medical Radiology and Imaging Technology**

**Program of Radiologic Technology and Medical Imaging**

**Course Specification of**  
**Special Medical Imaging Procedures**

**Course Code. (\_\_\_\_)**

**2024**



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:

Reviewed by:

Dr. -----

Head of the Department:

Dr. Awadh Al-Kubati

Quality Unit:

Dr. Mohammed  
Al-shamahi

Dean:

Dr. Abdulsalam  
Dalaq

## I. General Information:

|     |                                                  |                                                       |                      |                   |                         |          |
|-----|--------------------------------------------------|-------------------------------------------------------|----------------------|-------------------|-------------------------|----------|
| 1.  | Course Title:                                    | Special Medical Imaging Procedures                    |                      |                   |                         |          |
| 2.  | Course Code:                                     |                                                       |                      |                   |                         |          |
| 3.  | Credit Hours:                                    | Credit Hours                                          | Theory Contact Hours |                   | Practical Contact Hours |          |
|     |                                                  |                                                       | Lecture              | Tutorial/ Seminar | Lab                     | Clinical |
|     |                                                  | 2                                                     | 2                    | --                | --                      | --       |
| 4.  | Level/ Semester at which this Course is offered: | 4 <sup>th</sup> Level / 1 <sup>st</sup> Semester      |                      |                   |                         |          |
| 5.  | Pre –Requisite (if any):                         | Radiographic Techniques, Radiographic Equipments I&II |                      |                   |                         |          |
| 6.  | Co –Requisite (if any):                          | None                                                  |                      |                   |                         |          |
| 7.  | Program (s) in which the Course is Offered:      | Bachelor of Radiologic Technology and Medical Imaging |                      |                   |                         |          |
| 8.  | Language of Teaching the Course:                 | English                                               |                      |                   |                         |          |
| 9.  | Location of Teaching the Course:                 | Faculty of Applied Medical Science                    |                      |                   |                         |          |
| 10. | Prepared by:                                     |                                                       |                      |                   |                         |          |
| 11. | Date and Number of Approval by Council:          |                                                       |                      |                   |                         |          |

## II. Course Description:

This course provides students with comprehensive theoretical knowledge of specialized imaging procedures used in clinical and diagnostic radiology. It covers advanced modalities such as angiography, interventional radiology, fluoroscopy, and imaging procedures for specific patient populations, including pediatric, trauma, and oncological cases. Emphasis is placed on understanding procedural principles, equipment functionality, patient preparation, safety protocols, and emerging trends in medical imaging technologies.

| III. Course Intended Learning Outcomes (CILOs) :<br>Upon successful completion of the course,<br>students will be able to: |                                                                                                      | Referenced PILOs  |    |                                                                                                                                                                                                                         |
|----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. Knowledge and Understanding:                                                                                            |                                                                                                      | I, P<br>or<br>M/A |    |                                                                                                                                                                                                                         |
| a1                                                                                                                         | Understand the principles and clinical applications of specialized imaging procedures.               | A                 | A2 | Explanation of the principles and procedures of medical imaging acquisitions, medical imaging technique, and Radiological Technology Sciences as well as patient positioning in computed radiography and MRI technique. |
| a2                                                                                                                         | Identify and describe the components and functions of equipment used in advanced imaging techniques. | A                 | A1 | Demonstrate an understanding of fundamental knowledge of Biomedical sciences (Biology, Biophysics, Anatomy, Physiology, Sectional anatomy, and medical imaging technique).                                              |
| a3                                                                                                                         | Explain patient preparation protocols and safety considerations in special imaging procedures.       | A                 | A2 | Explanation of the principles and procedures of medical imaging acquisitions, medical imaging technique, and Radiological Technology Sciences as well as patient positioning in computed radiography and MRI technique. |
| B. Intellectual Skills:                                                                                                    |                                                                                                      |                   |    |                                                                                                                                                                                                                         |
| b1                                                                                                                         | Analyze factors affecting image quality in specialized imaging procedures.                           | A                 | B3 | Analyze and evaluate evidence-based information needed in medical imaging practice.                                                                                                                                     |
| b2                                                                                                                         | Evaluate clinical scenarios to select appropriate imaging modalities.                                | A                 | B1 | Assess the radiation exposure times and intensity of exposure to guarantee the imaging technique is accurate to reduce the risk factors and adapt to patient needs.                                                     |
| b3                                                                                                                         | Assess the impact of emerging technologies on current imaging practices.                             | A                 | B3 | Analyze and evaluate evidence-based information needed in medical imaging practice.                                                                                                                                     |

| C. Professional and Practical skills:                |                                                                                              |   |    |                                                                                                                                                                                 |
|------------------------------------------------------|----------------------------------------------------------------------------------------------|---|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| c1                                                   |                                                                                              |   |    |                                                                                                                                                                                 |
| c2                                                   |                                                                                              |   |    |                                                                                                                                                                                 |
| D. Transferable Skills:                              |                                                                                              |   |    |                                                                                                                                                                                 |
| d1                                                   | Communicate technical and procedural information effectively in a healthcare setting.        | A | D1 | Communicate effectively with clinicians, patients, and support staff.                                                                                                           |
| d2                                                   | Develop critical thinking and collaborative problem-solving skills through case discussions. | A | D4 | Function effectively as an individual, as a member, or leader of a team engaged in appropriate activities to the radiologic technology disciplines to accomplish a common goal. |
| I= Introduced, P=Practiced or M/A= Mastered/Advanced |                                                                                              |   |    |                                                                                                                                                                                 |

| (A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods: |                                                                                                      |                                                                                                                                  |                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Course Intended Learning Outcomes                                                                                               |                                                                                                      | Teaching Strategies                                                                                                              | Assessment Strategies                                                                   |
| a1                                                                                                                              | Understand the principles and clinical applications of specialized imaging procedures.               | <ul style="list-style-type: none"> <li>Lectures explaining advanced imaging techniques and clinical applications.</li> </ul>     | <ul style="list-style-type: none"> <li>Written exams, quizzes.</li> </ul>               |
| a2                                                                                                                              | Identify and describe the components and functions of equipment used in advanced imaging techniques. | <ul style="list-style-type: none"> <li>Visual aids and demonstrations of specialized imaging equipment functionality.</li> </ul> | <ul style="list-style-type: none"> <li>Assignments analyzing equipment use.</li> </ul>  |
| a3                                                                                                                              | Explain patient preparation protocols and safety considerations in special imaging procedures.       | <ul style="list-style-type: none"> <li>Case studies highlighting patient preparation and safety protocols.</li> </ul>            | <ul style="list-style-type: none"> <li>Case study reports and written exams.</li> </ul> |
| (B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:         |                                                                                                      |                                                                                                                                  |                                                                                         |
| Course Intended Learning Outcomes                                                                                               |                                                                                                      | Teaching Strategies                                                                                                              | Assessment Strategies                                                                   |

|                                                                                                                                              |                                                                                              |                                                                                                                                     |                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| b1                                                                                                                                           | Analyze factors affecting image quality in specialized imaging procedures.                   | <ul style="list-style-type: none"> <li>Interactive analysis of image quality and factors affecting it.</li> </ul>                   | <ul style="list-style-type: none"> <li>Written reports on image quality.</li> </ul>          |
| b2                                                                                                                                           | Evaluate clinical scenarios to select appropriate imaging modalities.                        | <ul style="list-style-type: none"> <li>Problem-solving exercises to select appropriate imaging modalities for scenarios.</li> </ul> | <ul style="list-style-type: none"> <li>Clinical scenario-based assignments.</li> </ul>       |
| b3                                                                                                                                           | Assess the impact of emerging technologies on current imaging practices.                     | <ul style="list-style-type: none"> <li>Research on advancements in imaging technologies and their impact.</li> </ul>                | <ul style="list-style-type: none"> <li>Research presentations.</li> </ul>                    |
| <b>(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:</b> |                                                                                              |                                                                                                                                     |                                                                                              |
|                                                                                                                                              | <b>Course Intended Learning Outcomes</b>                                                     | <b>Teaching Strategies</b>                                                                                                          | <b>Assessment Strategies</b>                                                                 |
| c1                                                                                                                                           |                                                                                              | <ul style="list-style-type: none"> <li></li> </ul>                                                                                  | <ul style="list-style-type: none"> <li></li> </ul>                                           |
| c2                                                                                                                                           |                                                                                              | <ul style="list-style-type: none"> <li></li> </ul>                                                                                  | <ul style="list-style-type: none"> <li></li> </ul>                                           |
| <b>(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:</b>               |                                                                                              |                                                                                                                                     |                                                                                              |
|                                                                                                                                              | <b>Course Intended Learning Outcomes</b>                                                     | <b>Teaching Strategies</b>                                                                                                          | <b>Assessment Strategies</b>                                                                 |
| d1                                                                                                                                           | Communicate technical and procedural information effectively in a healthcare setting.        | <ul style="list-style-type: none"> <li>Role-playing to practice effective communication of technical information.</li> </ul>        | <ul style="list-style-type: none"> <li>Reflective essays.</li> </ul>                         |
| d2                                                                                                                                           | Develop critical thinking and collaborative problem-solving skills through case discussions. | <ul style="list-style-type: none"> <li>Collaborative activities to analyze and propose imaging solutions in teams.</li> </ul>       | <ul style="list-style-type: none"> <li>Group presentation and reflective reports.</li> </ul> |

## IV. Course Contents:

### A. Theoretical Aspect:

| No.                                            | Units/Topics List                                 | Sub Topics List                                                    | Number of Weeks | Contact Hours | Learning Outcomes (CILOs) |
|------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------|-----------------|---------------|---------------------------|
| 1                                              | <b>Introduction to Special Imaging Procedures</b> | – Overview, types of special procedures, clinical applications     | 1               | 2             | a1, a2                    |
| 2                                              | <b>Angiography: Principles and Techniques</b>     | – Vascular imaging, equipment components, clinical applications    | 1               | 2             | a1, a2, b1                |
| 3                                              | <b>Interventional Radiology Procedures</b>        | – Techniques, equipment use, patient preparation                   | 1               | 2             | a3, b2                    |
| 4                                              | <b>Fluoroscopy Techniques</b>                     | – Equipment, real-time imaging, radiation safety considerations    | 1               | 2             | a2, b1, b2                |
| 5                                              | <b>CT in Specialized Procedures</b>               | – CT angiography, virtual colonoscopy, CT-guided interventions     | 1               | 2             | a3, b2                    |
| 6                                              | <b>MRI in Special Procedures</b>                  | – Functional MRI, MRI angiography, safety protocols                | 1               | 2             | a1, a2, b1                |
| 7                                              | <b>Mid-term Exam</b>                              | – All Previous topics                                              | 1               | 2             | a1, a2, a3, b1, b2        |
| 8                                              | <b>Oncological Imaging Procedures</b>             | – Imaging for cancer staging, treatment planning, follow-up        | 1               | 2             | a1, b3                    |
| 9                                              | <b>Cardiac Imaging</b>                            | – Techniques in angiography, CT, and MRI for cardiac assessments   | 1               | 2             | a1, b2, d2                |
| 10                                             | <b>Trauma Imaging</b>                             | – Imaging protocols for trauma cases, emergency imaging techniques | 1               | 2             | a2, b1, d1                |
| 11                                             | <b>Future Trends in Imaging</b>                   | – AI applications, emerging technologies in medical imaging        | 1               | 2             | b3, d2                    |
| 16                                             | <b>Final Exam</b>                                 | – All topics                                                       | 1               | 2             | a1, a2, a3, b1, b2, b3    |
| <b>Number of Weeks /and Units Per Semester</b> |                                                   |                                                                    | <b>16</b>       | <b>32</b>     |                           |

**B. Practical Aspect (Lab/Clinical) (if any):**

| No.                                     | Tasks/ Experiments | Number of Weeks | Contact Hours | Learning Outcomes (CILOs) |
|-----------------------------------------|--------------------|-----------------|---------------|---------------------------|
| 1                                       | None               |                 |               |                           |
| 2                                       |                    |                 |               |                           |
| 3                                       |                    |                 |               |                           |
| Number of Weeks /and Units Per Semester |                    | 11              | 22            |                           |

**C. Tutorial Aspect (if any):**

| No.                                     | Tutorial | Number of Weeks | Contact Hours | Learning Outcomes (CILOs) |
|-----------------------------------------|----------|-----------------|---------------|---------------------------|
| 1                                       | None     |                 |               |                           |
| 2                                       |          |                 |               |                           |
| 3                                       |          |                 |               |                           |
| Number of Weeks /and Units Per Semester |          |                 |               |                           |

**VII. Teaching Strategies:**

- Lectures
- Case Studies
- Group Discussions
- Research Assignments

**VII. Assessment Methods:**

- Written Exams
- Case Study Reports
- Group Presentation

**VII. Assignments:**

| No.   | Assignments | Week Due | Mark | Aligned CILOs (symbols) |
|-------|-------------|----------|------|-------------------------|
| 1     |             |          |      |                         |
| 2     |             |          |      |                         |
| Total |             |          | 10   |                         |

### VIII. Schedule of Assessment Tasks for Students During the Semester:

| No.   | Assessment Method  | Week Due   | Mark | Proportion of Final Assessment | Aligned Course Learning Outcomes |
|-------|--------------------|------------|------|--------------------------------|----------------------------------|
| 1     | Quizzes            | Weeks 4, 8 | 5    | 5%                             | a1, a2, a3                       |
| 2     | Midterm Exam       | Week 7     | 10   | 10%                            | a1, a2, b1, b2                   |
| 3     | Case Study Report  | Week 10    | 10   | 10%                            | a3, , b2, d1                     |
| 4     | Group Presentation | Week 13    | 5    | 5%                             | d1, d2                           |
| 5     | Final Exam         | Week 14    | 70   | 70%                            | a2, , b1, b3                     |
| Total |                    |            | 100  | 100 %                          |                                  |

### IX. Learning Resources:

#### 1- Required Textbook(s) (maximum two ):

- 1- A. Stewart Whitley, Angela Meadows, Jan Dodgeon, Jane Cullingworth, Ken Holmes, Graham Hoadley, Marcus Jackson, Randeep Kulshrestha, 2020, Clark's Procedures in Diagnostic Imaging, CRC Press.
- 2- Bruce W. Long, Jeannean Hall Rollins, Barbara J. Smith, 2018, Merrill's Atlas of Radiographic Positioning and Procedures, Volume 3, Elsevier Health Sciences.

#### 2- Essential References:

- 1- Albert M. Snopek, 2006, Fundamentals of Special Radiographic Procedures, 5th Edition, Saunders.
- 2- Bruce W. Long, Eugene D. Frank, Ruth Ann Ehrlich, 2012, Radiography Essentials for Limited Practice, 4th Edition, Elsevier Health Sciences.
- 3- Bruce W. Long, Eugene D. Frank, Ruth Ann Ehrlich, 2020, Workbook for Radiography Essentials for Limited Practice, 6th Edition, Kindle Edition, Elsevier.

#### 3- Electronic Materials and Web Sites etc.:

##### Electronic Materials and Websites

Prepared by:

Reviewed by:

Dr. -----

Head of the Department:

Dr. Awadh Al-Kubati

Quality Unit:

Dr. Mohammed  
Al-shamahi

Dean:

Dr. Abdulsalam  
Dalaq

- Radiological Society of North America (RSNA): [www.rsna.org](http://www.rsna.org)
- American Society of Radiologic Technologists (ASRT): [www.asrt.org](http://www.asrt.org)
- International Atomic Energy Agency (IAEA): [www.iaea.org](http://www.iaea.org)
- Health Physics Society: [www.hps.org](http://www.hps.org)

## X. Course Policies: (Based on the Uniform Students' By law (2007))

|   |                                                                                                                                                                                                                                                                                |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <b>Class Attendance:</b><br>Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.                                                                                      |
| 2 | <b>Tardiness:</b><br>A student will be considered late if he/she is not in class after 10 minutes of the start time of class.                                                                                                                                                  |
| 4 | <b>Assignments &amp; Projects:</b><br>Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.                                                                                         |
| 5 | <b>Cheating:</b><br>Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.                                        |
| 6 | <b>Forgery and Impersonation:</b><br>Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply. |
| 7 | <b>Other policies:</b><br>The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.                                     |
| 3 | <b>Exam Attendance/Punctuality:</b><br>No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.                                                                                  |

## **Faculty of Applied Medical Science**

Department of **Medical Radiology and Imaging Technology**

**Program of Radiologic Technology and Medical Imaging**

### **Course Plan (Syllabus) of Special Medical Imaging Procedures**

**Course Code. ....**

| I. Information about Faculty Member Responsible for the Course: |          |              |     |     |     |         |
|-----------------------------------------------------------------|----------|--------------|-----|-----|-----|---------|
| Name of Faculty Member:                                         |          | Office Hours |     |     |     |         |
| Location& Telephone No.:                                        | -----    |              |     |     |     |         |
| E-mail:                                                         | --@--.-- | SAT          | SUN | MON | TUE | WED THU |

**2024/2025**

## I. General Information:

|     |                                                  |                                                       |                      |                   |                         |          |
|-----|--------------------------------------------------|-------------------------------------------------------|----------------------|-------------------|-------------------------|----------|
| 12. | Course Title:                                    | Special Medical Imaging Procedures                    |                      |                   |                         |          |
| 13. | Course Code:                                     |                                                       |                      |                   |                         |          |
| 14. | Credit Hours:                                    | Credit Hours                                          | Theory Contact Hours |                   | Practical Contact Hours |          |
|     |                                                  |                                                       | Lecture              | Tutorial/ Seminar | Lab                     | Clinical |
|     |                                                  | 2                                                     | 2                    | --                | --                      | --       |
| 15. | Level/ Semester at which this Course is offered: | 4 <sup>th</sup> Level / 1 <sup>st</sup> Semester      |                      |                   |                         |          |
| 16. | Pre –Requisite (if any):                         | Radiographic Techniques, Radiographic Equipments I&II |                      |                   |                         |          |
| 17. | Co –Requisite (if any):                          | None                                                  |                      |                   |                         |          |
| 18. | Program (s) in which the Course is Offered:      | Bachelor of Radiologic Technology and Medical Imaging |                      |                   |                         |          |
| 19. | Language of Teaching the Course:                 | English                                               |                      |                   |                         |          |
| 20. | Location of Teaching the Course:                 | Faculty of Applied Medical Science                    |                      |                   |                         |          |
| 21. | Prepared by:                                     |                                                       |                      |                   |                         |          |
| 22. | Date and Number of Approval by Council:          |                                                       |                      |                   |                         |          |

## II. Course Description:

This course provides students with comprehensive theoretical knowledge of specialized imaging procedures used in clinical and diagnostic radiology. It covers advanced modalities such as angiography, interventional radiology, fluoroscopy, and imaging procedures for specific patient populations, including pediatric, trauma, and oncological cases. Emphasis is placed on understanding procedural principles, equipment functionality, patient preparation, safety protocols, and emerging trends in medical imaging technologies.

### III. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the course, students will be able to:

#### A. Knowledge and Understanding:

|    |                                                                                                      |
|----|------------------------------------------------------------------------------------------------------|
| a1 | Understand the principles and clinical applications of specialized imaging procedures.               |
| A2 | Identify and describe the components and functions of equipment used in advanced imaging techniques. |
| A3 | Explain patient preparation protocols and safety considerations in special imaging procedures.       |
|    | Recognize the clinical indications and contraindications for various specialized imaging methods.    |

#### B. Intellectual Skills:

|    |                                                                            |
|----|----------------------------------------------------------------------------|
| b1 | Analyze factors affecting image quality in specialized imaging procedures. |
| B2 | Evaluate clinical scenarios to select appropriate imaging modalities.      |
| B3 | Assess the impact of emerging technologies on current imaging practices.   |

#### C. Professional and Practical skills:

|    |  |
|----|--|
| c1 |  |
| c2 |  |

#### D. Transferable Skills:

|    |                                                                                              |
|----|----------------------------------------------------------------------------------------------|
| d1 | Communicate technical and procedural information effectively in a healthcare setting.        |
| D2 | Develop critical thinking and collaborative problem-solving skills through case discussions. |

### IV. Course Contents:

#### A. Theoretical Aspect:

| No. | Units/Topics List                                 | Sub Topics List                                                | Number of Weeks | Contact Hours |
|-----|---------------------------------------------------|----------------------------------------------------------------|-----------------|---------------|
| 1   | <b>Introduction to Special Imaging Procedures</b> | – Overview, types of special procedures, clinical applications | 1               | 2             |

Prepared by:

Reviewed by:

Dr. -----

Head of the Department:

Dr. Awadh Al-Kubati

Quality Unit:

Dr. Mohammed  
Al-shamahi

Dean:

Dr. Abdulsalam  
Dalaq

| No.                                            | Units/Topics List                             | Sub Topics List                                                    | Number of Weeks | Contact Hours |
|------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------|-----------------|---------------|
| 2                                              | <b>Angiography: Principles and Techniques</b> | – Vascular imaging, equipment components, clinical applications    | 1               | 2             |
| 3                                              | <b>Interventional Radiology Procedures</b>    | – Techniques, equipment use, patient preparation                   | 1               | 2             |
| 4                                              | <b>Fluoroscopy Techniques</b>                 | – Equipment, real-time imaging, radiation safety considerations    | 1               | 2             |
| 5                                              | <b>CT in Specialized Procedures</b>           | – CT angiography, virtual colonoscopy, CT-guided interventions     | 1               | 2             |
| 6                                              | <b>MRI in Special Procedures</b>              | – Functional MRI, MRI angiography, safety protocols                | 1               | 2             |
| 7                                              | <b>Mid-term Exam</b>                          | – All Previous topics                                              | 1               | 2             |
| 8                                              | <b>Oncological Imaging Procedures</b>         | – Imaging for cancer staging, treatment planning, follow-up        | 1               | 2             |
| 9                                              | <b>Cardiac Imaging</b>                        | – Techniques in angiography, CT, and MRI for cardiac assessments   | 1               | 2             |
| 10                                             | <b>Trauma Imaging</b>                         | – Imaging protocols for trauma cases, emergency imaging techniques | 1               | 2             |
| 11                                             | <b>Future Trends in Imaging</b>               | – AI applications, emerging technologies in medical imaging        | 1               | 2             |
| 16                                             | <b>Final Exam</b>                             | – All topics                                                       | 1               | 2             |
| <b>Number of Weeks /and Units Per Semester</b> |                                               |                                                                    | <b>16</b>       | <b>32</b>     |

**B. Practical Aspect (Lab/Clinical) (if any):**

| No. | Tasks/ Experiments | Number of Weeks | Contact Hours |
|-----|--------------------|-----------------|---------------|
| 1   | None               |                 |               |
| 2   |                    |                 |               |
| 3   |                    |                 |               |
| 4   |                    |                 |               |
| 5   |                    |                 |               |

| No.                                     | Tasks/ Experiments | Number of Weeks | Contact Hours |
|-----------------------------------------|--------------------|-----------------|---------------|
| 6                                       |                    |                 |               |
| 7                                       |                    |                 |               |
| 8                                       |                    |                 |               |
| 9                                       |                    |                 |               |
| 10                                      |                    |                 |               |
| 15                                      |                    |                 |               |
| Number of Weeks /and Units Per Semester |                    | 11              | 22            |

**C. Tutorial Aspect (if any):**

| No.                                     | Tutorial | Number of Weeks | Contact Hours |
|-----------------------------------------|----------|-----------------|---------------|
| 1                                       | None     |                 |               |
| 2                                       |          |                 |               |
| 3                                       |          |                 |               |
| Number of Weeks /and Units Per Semester |          |                 |               |

**VII. Teaching Strategies:**

- Lectures
- Case Studies
- Group Discussions
- Research Assignments

**VII. Assessment Methods:**

- Written Exams
- Case Study Reports
- Group Presentation

| VII. Assignments: |             |          |      |
|-------------------|-------------|----------|------|
| No.               | Assignments | Week Due | Mark |
| 1                 |             |          |      |
| 2                 |             |          |      |
| Total             |             |          | 10   |

| VIII. Schedule of Assessment Tasks for Students During the Semester: |                    |            |      |                                |
|----------------------------------------------------------------------|--------------------|------------|------|--------------------------------|
| No.                                                                  | Assessment Method  | Week Due   | Mark | Proportion of Final Assessment |
| 1                                                                    | Quizzes            | Weeks 4, 8 | 5    | 5%                             |
| 2                                                                    | Midterm Exam       | Week 7     | 10   | 10%                            |
| 3                                                                    | Case Study Report  | Week 10    | 10   | 10%                            |
| 4                                                                    | Group Presentation | Week 13    | 5    | 5%                             |
| 5                                                                    | Final Exam         | Week 14    | 70   | 70%                            |
| Total                                                                |                    |            | 100  | 100 %                          |

| IX. Learning Resources:                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>1- Required Textbook(s) (maximum two ):</b>                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| <ol style="list-style-type: none"> <li>1. A. Stewart Whitley, Angela Meadows, Jan Dodgeon, Jane Cullingworth, Ken Holmes, Graham Hoadley, Marcus Jackson, Randeep Kulshrestha, 2020, Clark's Procedures in Diagnostic Imaging, CRC Press.</li> <li>2. Bruce W. Long, Jeannean Hall Rollins, Barbara J. Smith, 2018, Merrill's Atlas of Radiographic Positioning and Procedures, Volume 3, Elsevier Health Sciences.</li> </ol>                                                    |  |
| <b>2- Essential References:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |
| <ol style="list-style-type: none"> <li>1. Albert M. Snopce, 2006, Fundamentals of Special Radiographic Procedures, 5th Edition, Saunders.</li> <li>2. Bruce W. Long, Eugene D. Frank, Ruth Ann Ehrlich, 2012, Radiography Essentials for Limited Practice, 4th Edition, Elsevier Health Sciences.</li> <li>3. Bruce W. Long, Eugene D. Frank, Ruth Ann Ehrlich, 2020, Workbook for Radiography Essentials for Limited Practice, 6th Edition, Kindle Edition, Elsevier.</li> </ol> |  |
| <b>3- Electronic Materials and Web Sites etc.:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                |  |
| <b>Electronic Materials and Websites</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          |  |

- Radiological Society of North America (RSNA): [www.rsna.org](http://www.rsna.org)
- American Society of Radiologic Technologists (ASRT): [www.asrt.org](http://www.asrt.org)
- International Atomic Energy Agency (IAEA): [www.iaea.org](http://www.iaea.org)
- Health Physics Society: [www.hps.org](http://www.hps.org)

## X. Course Policies: (Based on the Uniform Students' By law (2007))

|   |                                                                                                                                                                                                                                                                                |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <b>Class Attendance:</b><br>Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.                                                                                      |
| 2 | <b>Tardiness:</b><br>A student will be considered late if he/she is not in class after 10 minutes of the start time of class.                                                                                                                                                  |
| 4 | <b>Assignments &amp; Projects:</b><br>Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.                                                                                         |
| 5 | <b>Cheating:</b><br>Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.                                        |
| 6 | <b>Forgery and Impersonation:</b><br>Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply. |
| 7 | <b>Other policies:</b><br>The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.                                     |
| 3 | <b>Exam Attendance/Punctuality:</b><br>No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.                                                                                  |