



## RADIOGRAPHY CURRICULUM ANALYSIS GRID

| I. General Information |  |
|------------------------|--|
| Program Name           |  |
| JRCERT Program Number  |  |
| Date                   |  |

**DIRECTIONS:** Determine the course(s) in which each of the following content area is covered and enter the course number(s) and/or title(s). For guidance in what should be covered for each content area, please refer to the Radiography Curriculum (2022) published by the American Society of Radiologic Technologists.

| II. Introduction to Medical Imaging and Radiologic Sciences and Health Care |                   |
|---|-------------------|
| Professional Curriculum   | Program Course(s) |
| Medical Terminology   |                   |
| Procedures and Terminology  |                   |
| Orders, Requests, and Diagnostic Reports                                    |                   |
| Health Professions  |                   |
| Interprofessional Practice and Education                                    |                   |
| Evidence-based Practice   |                   |
| Health Care Environment   |                   |

|  |  |
|--|--|
| Health Provider Organization             |  |
| Accreditation                            |  |
| Regulatory Agencies                      |  |
| Radiology Organization                   |  |
| Professional Credentialing               |  |
| Professional Organizations               |  |
| Professional Development and Advancement |  |

| <b>III. Ethics and Law in Medical Imaging and Radiologic Sciences</b> |                          |
|---|--------------------------|
| <b>Professional Curriculum</b>  | <b>Program Course(s)</b> |
| Ethics and Ethical Behavior   |                          |
| Ethical Dilemmas  |                          |
| Legal Issues  |                          |
| Legal Doctrines and Standards   |                          |
| Patient Consent   |                          |

| <b>IV. Patient Care and Services in the Medical Imaging and Radiologic Sciences</b> |                          |
|---|--------------------------|
| <b>Professional Curriculum</b>  | <b>Program Course(s)</b> |
| Health Care Team  |                          |

|  |  |
|--|--|
| Professionalism in Patient Care                            |  |
| Patient/Radiographer Interactions                          |  |
| Safety and Transfer  |  |
| Evaluating Patient Needs                                   |  |
| Infection Control  |  |
| Medical Emergencies  |  |
| Trauma   |  |
| Drug Nomenclature  |  |
| Drug Classification  |  |
| General Pharmacologic Principles                           |  |
| Six Rights of Drug Safety                                  |  |
| Drug Categories Relevant to Radiography (uses and effects) |  |
| Contrast Agents  |  |
| Routes of Drug Administration                              |  |
| Pharmacology and Venipuncture                              |  |
| Tubes, Catheters, Lines, and Other Devices                 |  |

## V. Human Anatomy and Physiology

| Professional Curriculum            | Program Course(s) |
|------------------------------------|-------------------|
| Anatomical Nomenclature            |                   |
| Chemical Composition               |                   |
| Cell Structure and Genetic Control |                   |
| Metabolism                         |                   |
| Tissues                            |                   |
| Skeletal System                    |                   |
| Muscular System                    |                   |
| Nervous System                     |                   |
| Sensory System                     |                   |
| Endocrine System                   |                   |
| Digestive System                   |                   |
| Cardiovascular System              |                   |
| Lymphatic System and Immunity      |                   |
| Respiratory System                 |                   |
| Urinary System                     |                   |
| Reproductive System                |                   |
| Introduction to Sectional Anatomy  |                   |

## VI. Radiographic Procedures

| Professional Curriculum  | Program Course(s) |
|--|-------------------|
| Positioning and Projection Terminology                         |                   |
| General Considerations   |                   |
| Patient Considerations   |                   |
| Positioning Considerations for Routine Radiographic Procedures |                   |
| Procedural Considerations for Contrast Studies                 |                   |
| Mobile and Surgical Radiography                                |                   |

## VII. Radiographic Pathology

| Professional Curriculum               | Program Course(s) |
|---------------------------------------|-------------------|
| Definitions/Terminology               |                   |
| Causes of Disease (Process, Examples) |                   |
| Radiologic Pathology                  |                   |
| Implications for Practice             |                   |

## VIII. Radiation Physics and Instrumentation

| Professional Curriculum                              | Program Course(s) |
|--|-------------------|
| Structure of the Atom                                |                   |
| Nature of Radiation                                  |                   |
| X-Ray Production                                     |                   |
| Photon Interactions with Matter                      |                   |
| X-ray Circuit  |                   |
| Radiographic Equipment                               |                   |
| Diagnostic X-ray Tubes                               |                   |
| Fluoroscopy  |                   |
| Quality Control of Imaging Equipment and Accessories |                   |

## IX. Image Production

| Professional Curriculum  | Program Course(s) |
|--------------------------|-------------------|
| Exposure Factors         |                   |
| Image Acquisition        |                   |
| Image Acquisition Errors |                   |

|                                 |  |
|---------------------------------|--|
| Exposure Factor Formulation     |  |
| Computer Pre-processing         |  |
| Image Display                   |  |
| Quality Management              |  |
| Image Informatics and Archiving |  |
| Teleradiology                   |  |
| Downtime Procedures             |  |

| <b>X. Image Analysis</b>       |                          |
|--------------------------------|--------------------------|
| <b>Professional Curriculum</b> | <b>Program Course(s)</b> |
| Image Appearance Standards     |                          |
| Imaging Standards              |                          |
| Technical Factors              |                          |
| Procedural Factors             |                          |
| Clinical Factors               |                          |
| Artifacts                      |                          |
| Equipment Malfunction          |                          |
| Corrective Action              |                          |

## XI. Radiation Biology and Health Physics

| Professional Curriculum                                | Program Course(s) |
|--|-------------------|
| Introduction   |                   |
| Radiation Energy Transfer                              |                   |
| Radiation Effects                                      |                   |
| Radiosensitivity and Response                          |                   |
| Introduction to Health Physics                         |                   |
| Units, Detection, and Measurement                      |                   |
| Surveys, Regulatory/Advisory Agencies, and Regulations |                   |
| Personnel Monitoring                                   |                   |
| Application  |                   |
| Patient Protection                                     |                   |
| Personnel Protection                                   |                   |

## XII. Clinical Practice

| Professional Curriculum | Program Course(s) |
|-------------------------|-------------------|
| Professionalism         |                   |
| Procedural Performance  |                   |
| Clinical Competency     |                   |



### XIII. Additional Concentrations

| Professional Curriculum            | Program Course(s) |
|------------------------------------|-------------------|
| Bone Densitometry                  |                   |
| Cardiac Interventional             |                   |
| Computed Tomography                |                   |
| Magnetic Resonance                 |                   |
| Mammography                        |                   |
| Medical Dosimetry                  |                   |
| Nuclear Medicine/Molecular Imaging |                   |
| Radiation Therapy                  |                   |
| Sonography                         |                   |
| Vascular Interventional            |                   |

### OPTIONAL CONTENT

### XIV. Basic Principles of Computed Tomography

| Professional Curriculum               | Program Course(s) |
|---------------------------------------|-------------------|
| Computed Tomography Scanners          |                   |
| Components, Operations, and Processes |                   |
| Radiation Protection                  |                   |

## XV. Sectional Anatomy

| Professional Curriculum | Program Course(s) |
|-------------------------|-------------------|
| Anatomical Nomenclature |                   |
| Head and Brain          |                   |
| Neck                    |                   |
| Chest and Mediastinum   |                   |
| Abdomen                 |                   |
| Pelvis                  |                   |
| Musculoskeletal         |                   |

## XVI. Artificial Intelligence

| Professional Curriculum             | Program Course(s) |
|-------------------------------------|-------------------|
| Terminology and Concepts            |                   |
| Data and Data Sets                  |                   |
| Applications in Healthcare          |                   |
| AI in Medical Imaging               |                   |
| Ethics, Legality, and Liability     |                   |
| Regulation and Workflow Integration |                   |
| Precision Medicine                  |                   |

## XVII. Advancements in Medical Imaging

| Professional Curriculum         | Program Course(s) |
|---------------------------------|-------------------|
| Imaging Detectors               |                   |
| Imaging Technologies            |                   |
| Volumetric Imaging (3D)         |                   |
| Dynamic Digital Receptors (DDR) |                   |