

Program Number \_\_\_\_\_

Program Name \_\_\_\_\_

Date \_\_\_\_\_



### Magnetic Resonance Curriculum Analysis (ASRT)

**DIRECTIONS:** Determine the course(s) in which each of the following content areas is covered and enter the course number(s) and/or title(s) into the appropriate column. For guidance in what should be covered for each content area, please refer to the Magnetic Resonance Curriculum (2008) published by the American Society of Radiologic Technologists.

Professional Curriculum	Prerequisite Course(s)	Program Course(s)
<b>Clinical Practice and Patient Management</b>		
Clinical Practice		
Procedural Performance		
Infection Control		
Medical Emergencies		
Contrast Studies		
Tubes, Catheters, Lines and Collection Devices		
Imaging		
Competency (Mandatory, Elective)* from ARRT Clinical Experience Requirements		
<b>Computers in Imaging and Medical Informatics</b>		
Computer Fundamentals		
Computer Components		
Computer Operations		
Radiology Applications		
Digital Imaging		
Quality Assurance and Post-processing		
Display		
Computer Advancements for Imaging		
<b>Ethics and Law in the Radiologic Sciences</b>		
Ethics and Ethical Behavior		
Ethical Issues in Health Care		
Legal Issues		
Patient Consent		

\*Refer to ARRT Competency Requirements for mandatory and elective requirements.

<b>Professional Curriculum</b>	<b>Prerequisite Course(s)</b>	<b>Program Course(s)</b>
<b>Fundamentals of Imaging Science and Health Care</b>		
The Health Science Professions		
The Health Care Environment		
Hospital Organization		
Radiology Organization		
Accreditation		
Regulatory Agencies		
Professional Credentialing		
Professional Organizations		
Professional Development and Advancement		
<b>MR Imaging Procedures</b>		
Imaging Considerations		
Imaging Planes		
Signal Characteristics		
General Considerations		
Considerations for Routine MR Procedures		
Positioning and Procedural Considerations for Specific Studies		
Procedural Considerations for Contrast Studies		
Procedural Considerations for Special Studies		
Patient Education		
<b>MR Parameters, Imaging Options, and Quality Assurance</b>		
MR Imaging Parameters and Sequence Selections		
Imaging Options		
Quality Assurance		
<b>MR Pathology</b>		
Central Nervous System		
Head and Neck		
Thorax		
Abdomen		
Pelvis		
Musculoskeletal		
General Vascular Disorders		

<b>Professional Curriculum</b>	<b>Prerequisite Course(s)</b>	<b>Program Course(s)</b>
<b>MR Instrumentation and Imaging</b>		
Magnetism		
Magnets		
Shim Systems		
Radiofrequency Systems		
Gradient Systems		
Ancillary Equipment		
Computer Systems		
Operational Flow		
Imager Maintenance		
Facility Operational Equipment		
<b>MR Pulse Sequences, Image Formation and Image Contrast</b>		
Intrinsic Contrast Characteristics (Tissue Characteristics)		
Extrinsic Contrast Characteristics (User-selection Parameters for Image Contrast)		
Pulse Sequences		
Image Contrast Characteristics		
MR Contrast Media		
MR Image Formation		
Post Processing		
<b>MR Safety</b>		
Introduction		
Static Magnetic Field		
Radio Frequency (RF) Magnetic Field		
Gradient Magnetic Fields		
Patient and Personnel Safety Screening in MR (Technologist Responsibilities)		
Equipment Safety Screening in MR Environment (Technologist Responsibilities)		
Monitoring of Ancillary Equipment		
Emergencies in the MR Environment Requiring Technologist Action		
Safety in MR Contrast Administration		

<b>Professional Curriculum</b>	<b>Prerequisite Course(s)</b>	<b>Program Course(s)</b>
<b>Pharmacology and Drug Administration</b>		
Drug Nomenclature		
Method of Drug Classification		
General Pharmacologic Principles		
Five Rights of Drug Safety		
Drug Categories of Relevance to MRI (Side Effects, Uses and Impacts on Medical Imaging)		
Classification of Contrast Agents		
Routes of Drug Administration		
Intravenous Drug Therapy		
Current Practice Status		
Informed Consent		
<b>Physical Principles of Magnetic Resonance Imaging</b>		
History of MR		
Matter		
Nuclear Magnetism		
MR Signal Production		
MR Signal Induction/Sampling/Conversion		
MR Image Contrast Characteristics		
Introduction to MR Image Formation		
Imaging Planes		
K-Space and Image Formation		
<b>Sectional Anatomy</b>		
The Head		
The Spine		
The Soft Tissue (Skeletal Components – see Spine)		
The Thorax		
The Abdomen		
The Pelvis		
The Upper Extremity		
Lower Extremity		

There must be a minimum of 15 college credit-bearing hours of general education coursework. Educational programs in magnetic resonance are **required** to incorporate communications and mathematics/analytical studies. The program is encouraged to satisfy the remaining general education elements of the curriculum by drawing upon the varying categories of study identified below. Each program is required to submit information regarding the courses in the spaces below.

Categories -

- Communications
- Mathematical/Logical Reasoning
- Arts and Humanities
- Information Systems
- Social/behavioral sciences
- Natural sciences

<b>Category (See Below)</b>	<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours</b>
Communications (required)			
Mathematics/Analytical Studies (required)			
<b>Total Hours for Post-secondary General Education Courses</b>			