

- ✓ **ARMRIT-Approved 18-Month Certificate**
- ✓ **Accredited by the ARMRIT COA**
- ✓ **U.S. DOL Registered Apprenticeship**

Tesla MR is an **18-month** program delivered in three phases: **Academics**, **Simulator**, and **Clinicals**. The following pages detail every **course module** with a short description, the **simulator scanning body parts**, and the **clinical competencies** evaluated by a mentor during the clinical internship.

COURSE MODULES 25 modules

Phase 1 Academics: MRI Foundations

Months 1-2

- 01 Introduction to MRI.** Foundations of MRI technology and its role in medical imaging.
- 03 General Anatomy & Physiology.** Core anatomy and physiology concepts for MRI technologists.
- 05 Instrumentation I: Magnets.** Magnet types, superconductivity, cryogenics, and imaging hardware.
- 07 MRI Safety II: RF & Gradient Fields.** RF burns, SAR management, implant safety, and acoustic-noise hazards.
- 09 MRI Procedures & Set-Up II: Body.** Body-region positioning, landmarks, and imaging procedures.
- 11 Patient Care & Management.** HIPAA, patient rights, vitals, infection control, and communication.
- 13 Image Contrast Mechanisms.** How T1, T2, and PD weighting and TR/TE create image contrast.
- 02 Medical Terminology.** Prefixes, suffixes, root words, abbreviations, and positioning terms.
- 04 Subatomic Principles of MRI.** Magnetism, electromagnetic waves, resonance, and precession.
- 06 MRI Safety I: Magnetic Fields.** Zones, projectile and cryogen hazards, screening, contraindications.
- 08 MRI Procedures & Set-Up I: Neuro.** Brain and spine positioning, landmarks, and protocols.
- 10 MRI Procedures & Set-Up III: MSK.** Knee, hip, shoulder, elbow, and wrist positioning and coverage.
- 12 Cross-Sectional Anatomy I: Neuro.** Brain structures, vessels, and pathology across all planes.

Phase 2 Simulator: Advanced Imaging & Scanning

Months 3-7

- 14 Instrumentation II: Gradients.** Gradient amplitude, rise time, and slew rate in imaging.
- 16 Pulse Sequences I.** Spin echo: TR, TE, k-space, contrast weighting, and scan time.
- 18 Pulse Sequences II.** Inversion recovery (STIR, FLAIR), gradient echo, and fast spin echo.
- 20 Image Artifacts.** Identifying and correcting motion, aliasing, chemical-shift, and more.
- 22 Cross-Sectional Anatomy III: MSK.** Shoulder, elbow, wrist, hip, knee, and ankle anatomy.
- 15 Instrumentation III: Surface Coils.** Transmit/receive coils, phased arrays, SNR, and coil safety.
- 17 Cross-Sectional Anatomy II: Body.** Chest, abdomen, and pelvis anatomy across all planes.
- 19 Image Quality & Parameter Selection.** TR, TE, FOV, matrix, and bandwidth trade-offs.
- 21 MRI Safety III: Contrast Agents.** Gadolinium chemistry, administration, reactions, NSF, screening.

Phase 3 Clinicals: Advanced Applications

Months 8-18

- 23 MR Angiography.** Time-of-flight, phase-contrast, and contrast-enhanced MRA.
- 25 Advanced Applications: Spectroscopy.** Metabolite identification, voxel placement, and clinical use.
- 24 Advanced Applications: EPI.** Diffusion (DWI/DTI), perfusion, and functional MRI.

SIMULATOR SCANNING BODY PARTS 25 body parts · 5 batches

1 Beginner	2 Intermediate	3 Advanced	4 Expert	5 Supplemental
Brain	Bony Pelvis	Thoracic Spine	IACs	Head / Circle of Willis
Cervical Spine	Wrist	Prostate	Pituitary	Carotid Arteries
Lumbar Spine	Shoulder	Breast	Orbits	Thumb
Knee	Elbow	Abdomen	Hand	Brachial Plexus
Ankle	Hips	Soft Tissue Neck	Foot	Liver

Students progress through the batches in order on the MRI simulator. **Four passing simulator studies count as one clinical hour** (up to ~250 hours) toward the 1,000-hour clinical requirement.

Each competency is demonstrated on live equipment during the clinical internship and **scored 1–5 by the student's mentor.**

MRI Foundation 3

- Accurately uses medical terminology
- Demonstrates knowledge of relevant A&P
- Properly handles medical equipment

Safety 14

- Monitors the MRI environment for safety hazards
- Prevents RF burns with proper patient setup
- Properly screens and documents implants
- Explains MRI safety zones
- Verifies MRI-safe equipment for Zone IV
- Follows MRI safety guidelines
- Identifies correct contrast mediums
- Screens for contrast contraindications
- Calculates eGFR per facility policy
- Performs IV insertions safely
- Administers IV contrast per orders
- Sets injector flow rates
- Explains how to get approval for contrast
- Administers non-IV contrast per orders

Patient Care & Management 38

- Takes and records patient vitals
- Performs BLS and CPR
- Verifies patient identity
- Assesses patient communication needs
- Obtains and documents medical history
- Confirms and interprets physician orders
- Verifies physician order requirements
- Explains MRI procedures to patients
- Communicates safety concerns to technologists
- Documents patient information in the EMR
- Ensures HIPAA compliance
- Measures and records patient weight
- Prepares table and positioning aids
- Selects and positions correct coil
- Understands minor patient care workflow
- Positions patient safely and comfortably
- Provides hearing protection
- Verifies hearing protection is adequate
- Explains noise communication procedures
- Applies padding properly
- Provides and explains alert bulb use
- Landmarks and centers patient correctly
- Releases patient per protocols
- Maintains patient communication during exam
- Monitors patient for distress
- Assesses patient comfort and anxiety
- Attaches monitoring devices correctly
- Enters patient information into MRI system
- Selects correct scan protocols
- Explains scan parameter principles
- Identifies anatomy and pathology on images
- Adjusts parameters for image quality
- Pulls prior exams for comparison
- Gives and documents post-exam instructions
- Updates patient records in the EMR
- Cleans magnet room per protocol
- Processes images per protocol
- Describes exam charges correctly

Image Quality 19

- Explains SNR and scan-time optimization
- Performs QA procedures
- Performs MRI system startup
- Troubleshoots MRI system issues
- Optimizes a scan sequence
- Selects the correct pulse sequence
- Explains how to improve image quality
- Explains what an artifact is
- Identifies common artifacts
- Determines artifact root cause
- Explains how to fix an artifact
- Prevents artifacts before scanning
- Performs scans per protocol
- Performs neuro scans per protocol
- Performs MSK scans per protocol
- Performs abdominal scans per protocol
- Performs pelvis scans per protocol
- Performs MRA scans per protocol
- Performs breast scans per protocol

Equipment & Quality Control 9

- Positions QA phantom correctly
- Landmarks and loads a QA phantom
- Completes a QC phantom scan
- Performs system boot-up and shutdown
- Logs magnet pressure
- Logs helium levels
- Reports system issues per protocol
- Inspects coils and equipment for damage
- Logs room temperature and humidity

Emergency Response Handling 5

- Handles emergencies per protocol
- Evacuates Zone IV in emergency
- Explains quench procedures and indications
- Docks and undocks tables
- Performs emergency table egress

Infection Control 5

- Washes hands properly
- Identifies appropriate PPE
- Disinfects MRI equipment
- Maintains clean work environment
- Handles and disposes hazardous materials