

Diagnostic Medical Imaging Course Sequence

Description: The mission of the Diagnostic Medical Imaging Program is to prepare individuals in the judicious use of ionizing radiation in both diagnostic radiographic and fluoroscopic procedures. This is accomplished by the application of knowledge in anatomy, physiology, and osteology; in the skillful positioning of the client-patient; the selection of correct technical factors; the proper handling and manipulation of radiation producing equipment; the utilization of accepted radiation protection procedures; and the processing of the image in preparation for diagnostic interpretation.

The Diagnostic Medical Imaging Program at the Community College of Philadelphia is accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT) (20 N. Wacker Drive, Suite 2850, Chicago, IL 60606; phone: 312-704-5300; email: mail@jrcert.org; website: www.jrcert.org). The College seeks to provide a program in compliance with the JRCERT Standards, and encourages students to be cognizant of the [Standards for an Accredited Educational Program in Radiography](#).

The Diagnostic Medical Imaging curriculum begins once a year in Late Summer Session (July). The curriculum consists of eight consecutive semesters (24 months, including summer sessions) combining classroom/laboratory components at the College with Clinical Education courses at an area affiliate hospital. During Clinical Education, the student is supervised by College faculty and clinical staff while interacting with patients in the Radiology Department.

Student Learning Outcomes:

Upon completion of this program, students will:

1. Competently and safely perform radiographic/fluoroscopic procedures.
Student Learning Outcomes:
 - - Perform routine radiographic procedures
 - Demonstrate quality patient care
 - Practice/apply appropriate radiation protection of patients, themselves and others
 - Communicate effectively
Student Learning Outcomes:
 - Demonstrate effective oral communication skills
 - Demonstrate effective written communication skills
 - Think critically and problem solve in various patient care situations.
Student Learning Outcomes:
 - Demonstrate logical image sequencing for patients with multiple exams
 - Demonstrate knowledge of C-arm equipment and OR procedures
 - Identify diagnostic quality images and correct non-quality images accordingly
 - Demonstrate professionalism.
Student Learning Outcomes:

- Demonstrate professional behavior in delivering patient care

Programmatic Effectiveness: In addition to evaluating program goals and student learning outcomes, the Diagnostic Medical Imaging Program evaluates the program completion rate, credentialing examination pass rate, graduate employment, graduate satisfaction, and employer satisfaction for programmatic effectiveness. Current data is as follows:

Program completion rate: 26 students started the program in July 2015 and 21 graduated in June 2017 for a program completion rate of 80.7%.

Credentialing Examination Pass Rate: 100% of the 82 graduates from 2013-2017 have passed the ARRT Radiography examination on the first attempt.

Graduate Employment: Between 2012 and 2016, 50 graduates actively sought employment in Medical Imaging and 48 are employed for a five-year job placement rate of 96%.

As stated in Standard Five-Objective 5.2 of the 2014 JRCERT Standards for an Accredited Educational Program in Radiography, "not actively seeking employment" is defined as:
Graduate fails to communicate with program officials regarding employment status after multiple attempts OR
Graduate is unwilling to seek employment that requires relocation OR
Graduate is unwilling to accept employment due to salary or hours OR
Graduate is on active military duty OR
Graduate is continuing education.

Additional information with regard to [Programmatic Effectiveness](#) can be obtained [here](#).

Program Entry Requirements: Admission into the Diagnostic Medical Imaging Program is selective, competitive, and requires potential students to fulfill all admission requirements of the College. Applications submitted from **October 1st until January 1st** will receive priority in the Allied Health pre-entrance testing and review process.

Students must meet the following minimum requirements before applying to the Diagnostic Medical Imaging Program:

- High School diploma or GED documentation
- High School Biology or its equivalent ([BIOL106](#)) with grade "C" or better in the past 10 years
- Demonstration of readiness for [ENGL 101](#) and [MATH 118](#) as determined by the College's placement tests, or by successfully completing developmental coursework
- Minimum grade point average of 2.50

Students new to the College can begin the application process by first [applying](#) to the College. Transcript evaluation and completion of a placement test (or test waiver) is required.

Current College students can begin the application process by attending a DMI Application Workshop. A list of workshops can be obtained through the Counseling Center (Room BG-07). After completion of the DMI Application Workshop, applicants must:

- Submit official copies of supporting documents (e.g. official transcripts)
- Complete & sign an application form
- Submit a resume with letter of intent
- Submit two letters of recommendation
- Complete the pre-entrance Allied Health testing program with benchmark score or higher

Applicants who complete and meet the aforementioned requirements will be eligible to continue in the admissions process and will be contacted, in writing, concerning the scheduling of an admissions interview with the Program Director (or designee). A scheduled interview does not guarantee admission. Upon completion of the admissions interview, the Program Director (or designee) will review and score all applicants with particular attention to:

1. Cumulative grade point average
2. Strength of secondary/post-secondary academic curriculum
3. Allied Health pre-entrance examination score
4. Extracurricular activities, community service, and work experience
5. Personal interview

Conditions for Acceptance: All applicants are notified in writing regarding the admissions decision. All offers of acceptance are contingent upon successful completion of the following:

1. Acknowledgement of Core Performance Standards for Health Care Career Programs and physical demand analysis.
 - Clinical education requires a full range of motion, including pushing, pulling, twisting, lifting and bending. Standing and walking are required for the entire clinical day (8 hours). Students who are registered with the [Center on Disability](#) must inform the Program Director if special accommodations are required.
2. Completion of Criminal Background Check
 1. Conviction of serious and/or violent crimes results in denial of admission into the DMI Program.
 2. Upon completion of the DMI Program, students will be eligible to apply for the American Registry of Radiologic Technologists certification examination in Radiography. The ARRT reserves the right to deny or reject an application for certification as stated in the [ARRT Standards of Ethics](#). Prior to applying to the DMI Program, candidates are encouraged to complete an [Ethics Review Pre-Application](#) with the ARRT for the following circumstances:
 - Criminal proceedings including: Misdemeanor charges and convictions; Felony charges and convictions; Military courts-martials; and/or
 - Disciplinary actions taken by state or federal regulatory authority or certification board; and/or
 - Honor code (academic) violations.

3. Completion of Child Abuse Clearance
 - Any record results in denial of admission into the DMI Program.
4. Completion of Drug Screening
 - A positive screening results in denial of admission into the DMI Program.

Additional conditions for Program commencement include:

- Documentation of a complete physical examination, including required laboratory tests. All health information is kept confidential. Students will have direct contact with patients, and have the responsibility to maintain very high standards of health practice.
- Documentation of up to date immunizations prior to clinical assignment. Additional immunizations (e.g. influenza) may be necessary.
- Documentation of current health insurance coverage, which must be maintained throughout the Program.
- Attendance at scheduled Program orientation prior to entry.
- Purchase of DMI student uniform.
- Adult, child, and infant [CPR certification](#) for Healthcare Providers (due prior to the commencement of Clinical Education I).

Disciplinary Action: Involvement in any incident which resulted in disciplinary action against a student at the Community College of Philadelphia or any post-secondary institution is considered in the admissions process. The Diagnostic Medical Imaging Program reserves the right to deny admission to any applicant who has a documented history of violating College rules and/or regulations or who has been previously suspended or expelled from the College or any other post-secondary educational institution. Students subjected to sanction as a result of violating an academic honor code or suspended or dismissed by an educational program may not qualify for the ARRT certification examination.

Reconsideration: An applicant who believes that an error of fact has been made in terms of the information provided to the decision making committee can request reconsideration by the committee. This request must be made in writing within 10 days from the date of the letter notifying the applicant of the decision. The reconsideration should address what the applicant considers to be errors of fact. Following reconsideration by the decision making committee, the applicant can appeal the committee's decision to the **Vice President for Academic and Student Success**, whose decision is final.

Any official change or the initiation of any governmental proceeding affecting the information revealed by the required criminal or child abuse background check must be reported immediately to the Program Director of DMI.

Readmission Policy: Students who withdraw from the Program in good standing may apply for readmission only **once**. The Program must be completed within five (5) academic years after a student's initial enrollment. In order to be considered for Program readmission, the applicant must:

1. Successfully complete all DMI Program prerequisite requirements.

2. Successfully complete a comprehensive written exam. The exam content will include current material from courses which the student previously completed.
3. Successfully demonstrate clinical competence through simulation testing. Competency procedures will be selected based on the course(s) the student has taken.
4. Repeat previously completed courses as recommended by Program faculty. Curriculum analysis is conducted annually and course content may change to ensure Program alignment with the American Registry of Radiologic Technologists (ARRT) Content Specifications for the Examination in Radiography and the American Society of Radiologic Technologists (ASRT) Radiography Curriculum. Repeating of recommended courses ensures the student is prepared for Radiography certification and registration in accordance with the ARRT.

The results of the written exam and competency testing, as well as the student's prior academic and clinical progress, will be evaluated by faculty to determine the student's potential for success in the Program and semester placement. DMI courses are offered chronologically and only once a year, therefore a readmission date will be based on the semester in which the courses are being offered.

Students seeking readmission into the Diagnostic Medical Imaging Program must contact the Program Director in writing prior to the requested entering semester deadline as follows:

- **Fall** semester readmission – **May 1st** request deadline
- **Spring** semester readmission – **October 1st** request deadline
- **Early Summer Term** readmission – **February 1st** request deadline
- **Late Summer Term** readmission – **April 1st** request deadline

Note: Students who fail the comprehensive written exam or the competency testing will be required to re-apply to the Program by following the Program admissions process. Students may only reapply to the Program **once**.

Program of Study and Graduation Requirements:

- DMI students must follow the curriculum sequence according to courses listed in each semester, unless approval is granted by the Program Director.
- Students in the DMI curriculum may be dropped at any time if, in the opinion of the Faculty and Program Director, such students are not suited to be Radiologic Technologists.
- Students whose attitude and behavior are considered unprofessional may be dropped from the curriculum, pending a review by the Faculty, Program Director and Advisory Committee.
- Students may not continue in the DMI curriculum with a grade of "D" or below in any DMI or general education course.
- Any breach of the ARRT Standards of Ethics will result in immediate dismissal from the Program.

Graduation Requirements: To qualify for the Associate in Applied Science (A.A.S.) degree in Diagnostic Medical Imaging, students must complete 76 credit hours as prescribed, attain a grade point average of 2.00 in all Program core courses, and attain no grade below a "C" in any course. Upon successful completion of the Program, graduates are eligible for certification and registration in *Radiography* by the American Registry of Radiologic Technologists ([ARRT](#)).

Pregnancy Policy: If a student becomes pregnant while enrolled in the Diagnostic Medical Imaging Program, disclosure of the pregnancy is entirely voluntary. However, since radiation to the unborn child could be harmful, the student is strongly encouraged to notify the Program Director in writing once confirmation of the pregnancy has occurred. Upon notification, the student will be scheduled to meet with the Radiation Safety Officer or Radiology Department Physicist at the appointed clinical education setting. During the meeting, the student will be provided with potential risks and consequences of prenatal radiation exposure.

The student may then choose to do one of the following:

1. Withdraw immediately from the Program in good standing. A student who withdraws from the Diagnostic Medical Imaging Program because of pregnancy can gain readmission to the Program by following the established readmission procedure.
2. Remain in the program without modification. If the student chooses to do so, the following will occur:
 1. The student will provide documentation to the Program Director of conception date and expected delivery date.
 2. The student will sign a "Pregnancy Declaration" as required by the clinical affiliate.
 3. The student will be provided with ALARA training at the clinical education setting to ensure the monthly embryo-fetal dose does not exceed the NCRP recommendation of 0.5 mSv (5.0 mSv for the entire pregnancy). Neither the College nor the clinical affiliate can assume responsibility for any harm that might occur to an embryo or fetus as a result of exposure to ionizing radiation. Depending upon clinical affiliate policy, the student may be provided with a monthly fetal badge. The badge must be worn at waist level, under the lead apron.
3. Withdraw the declaration of pregnancy. The declaration of pregnancy may be withdrawn at any time by contacting the Program Director in writing.

Magnetic Fields: Exposure to magnetic fields can occur during clinical education. Certain factors such as tattoos, body piercings, permanent makeup, external insulin pumps, and ear and eye implants may preclude students from participating in some clinical experiences but will not affect Program completion.

Diagnostic Medical Imaging Course Sequence

Course Number and Name	Prerequisites and Corequisites	Credits	Gen Ed Req.
First Semester – Late Summer Session			
DMI 101 - Introduction to Diagnostic Medical Imaging		2	
ENGL 101 - English Composition I		3	
FNMT 118 or higher		3	Mathematics
Second Semester – Fall			
DMI 105 - Image Production and Evaluation I	Prereq: FNMT 118 with a grade of C or better and DMI 101 with a C or better Coreq: DMI 119 , DMI 131 , DMI 181	4	
DMI 119 - Intro to Radiologic Physics		2	
DMI 131 - Patient Care and Procedures I	Prereq: ENGL 101 Coreq: DMI 105	5	
DMI 181 - Radiographic Osteology and Pathology I		2	
BIOL 109 - Anatomy & Physiology		4	Natural Sciences
Third Semester – Spring			
DMI 106 - Image Production and Evaluation II	Prereq: DMI 105 Coreq: DMI 120 , DMI 132 , DMI 182	2	
DMI 120 - Radiographic Equipment and Operation	Prereq: DMI 119	2	
DMI 132 - Patient Care and Procedures II	Prereq: DMI 105 with a C or better and BIOL 109 with a C or better Coreq: DMI 106	5	Am/Global Diversity
DMI 182 - Radiographic Osteology and Pathology II	Prereq: DMI 181	2	
BIOL 110 - Anatomy & Physiology II	Prereq: BIOL 109	4	
Fourth Semester – Early Summer Session			
DMI 198 - Clinical Education III	Prereq: DMI 106	2	
CIS 103 - Applied Computer Technology		3	Tech Comp

Fifth Semester – Late Summer Session			
DMI 199 - Clinical Education IV	Prereq: DMI 198	2	
ENGL 102 - The Research Paper	Prereq: ENGL 101 with a grade of "C" or better	3	ENGL 102, Info Lit
Sixth Semester – Fall			
DMI 221 - Advanced Imaging/Computer Modalities	Prereq: DMI 106 and DMI 199 , both with a C or better Coreqs: CIS 103 , DMI 231 , DMI 261	4	
DMI 231 - Patient Procedures III	Prereq: DMI 106 , DMI 199 , BIOL 110 , ENGL 102 , all with a C or better; Coreqs: DMI 221 and DMI 261	5	
DMI 261 - Radiation Biology and Protection	Prereq: DMI 199 Coreq: DMI 221 , DMI 231	2	
SOC 101 - Introduction to Sociology or GEOG 103 - Introduction to Human Geography or ANTH 112 - Cultural Anthropology		3	Social Sciences Interpretive Studies Writing Intensive
Seventh Semester – Spring			
DMI 222 - Angiographic/Interventional Procedures	Prereq: DMI 221 Coreq: DMI 232	2	
DMI 232 - Patient Procedures IV	Prereq: DMI 231	5	
Choose one: ASL 101 - Elementary American Sign Language I ENGL 115 - Public Speaking ENGL 116 - Interpersonal Communication ENGL 117 - Group and Team Communication ENGL 118 - Intercultural Communication HIST 150 - History of American Healthcare HUM 101 - Cultural Traditions PHIL 111 - Critical Thinking PHIL 211 - Ethical Problems SPAN 111 - Elementary Spanish for Healthcare I	For ENGL 115 , ENGL 116 , and ENGL 117 , prereq: ENGL 101 , which may be taken concurrently	3	Humanities

Eighth Semester – Early Summer Session			
DMI 299 - Clinical Education VII	Prereq: DMI 222	2	
Minimum Credits Needed to Graduate: 76			

General Education Requirements: All general education requirements necessary for graduation are met through the courses in the program as indicated above. Students who wish to take courses that differ from the general education courses indicated above must complete a course substitution request form. To access the form, login to the [MyCCP portal](#), and in the **Student** tab, under **Electronic Forms**, click on the **Records and Registration Forms** link, then choose **Request For Course Substitution Of Graduation Requirement** link. A [more detailed explanation](#) of the College’s general education requirements is also available.

All General Education courses may be completed before entering the DMI Program **or** along with DMI Program courses. Students are encouraged to complete General Education requirements prior to Program commencement to make their schedules more manageable.

For More Information, Contact: The Division of Math, Science and Health Careers, Room W2-7, 1700 Spring Garden Street, Philadelphia, PA 19130, Telephone (215) 751-8430; or the College Information Center (215) 751 8010.