

# DIAGNOSTIC MEDICAL IMAGING SCIENCES (Radiologic Technology)

## Curriculum Guide for Academic Year 2021-2022

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Students planning to **transfer** to a four-year college or university should refer to the ASSIST web site at [www.assist.org](http://www.assist.org) and **consult a counselor** before beginning a program of study. To meet with a counselor, please call 562-938-4561 for the LAC, or 562-938-3920 for PCC. Students may also wish to visit the Transfer Center on either campus.

### Program Admission Requirements

Applications are not accepted until the following prerequisites are met:

1. Graduation from an accredited high school, or the equivalent.
2. Cumulative grade point average of 2.5 or higher in ALL college coursework.
3. Completion of AH 60, AH 61, and ANAT 41 within five years with a letter grade of "C" or better.
4. Students must attend one of the DMI program monthly information sessions prior to application submission.
5. Students **MUST** keep the Admissions and Records Office AND the School of Health and Science advised of their current e-mail address, home address, and telephone number and any name changes. All changes **MUST** be submitted in writing.
6. Complete the Diagnostic Medical Imaging Program application form and bring the completed application form and documentation to the School of Allied Health and Science, Room C100.
7. All applicants will be notified by email regarding the status of their applications.

### Selection Process

Program Admission Requirements

The following is considered in the selection process each November for the following Spring DMIP class:

1. Date of DMIP application.
2. Completion of the General Education requirements for an Associate degree Plan A, B, or C.
3. Must pass within three attempts the ATI TEAS (Test of Essential Academic Skills) exam with a score of 62% or higher. Older TEAS versions are not accepted.
4. Provisionally accepted students must attend the **MANDATORY** DMI advisory meeting prior to the DMI program starting in the spring semester in order to progress in the DMI program. \*

\*\*Due to their service to our country and time away from public life, up to 2 veterans per year are given immediate placement into the next available DMIP class, upon completion of

1. DMIP application submission \*\* 2
2. Items # 2, 3, and 4 under "Program Admission Requirements"

\*\*The LBCC DMIP participates with the Promised Pathways Program for Long Beach Unified High School District. Placement into the DMIP promise pathway is awarded based upon specific criteria (Contact DMIP Director for details).

### Information Session

The Diagnostic Medical Imaging Program (DMIP) holds monthly information sessions from September to June (EXCEPT JANUARY). Please look up times, days, and locations of the information session on the LBCC website under "view our upcoming events" or you may contact the Allied Health Office, DMIP director, Allied Health Coordinator, or the counseling office.

1. Students **MUST** attend one of the DMIP information sessions before their DMIP application is accepted.
2. Students who need additional information about the Diagnostic Medical Imaging Program are

### College Application Procedures

Applications are accepted on a continuous basis.

1. Apply for admission to the college through the Admissions Office (applications are available online at <http://www.lbcc.edu/admissions.>)
2. Submit transcripts from high school and previous college work to the admissions Office and the School of Allied Health and Science.

### Eligibility for the ARRT Exam

Eligibility for the ARRT examination requires the candidate to complete an ARRT Accredited Radiology Program, possess a minimum of an Associate Degree, and be of good moral character. Conviction of a misdemeanor or felony may disqualify the candidate. An Ethics pre-application review may be pursued by contacting the ARRT at [www.ARRT.org](http://www.ARRT.org). Associate in Science (A.S.)

### Prerequisite Courses

The following courses must be completed within five years prior to the application date:

ANAT 41	Anatomy and Physiology	5	
AH 60	Medical Terminology	3	
AH 61	Integration of Patient Care	2	
<b>Subtotal Units</b>		<b>10</b>	

### Program of study leading to: Associate in Science (A.S.) Degree

#### **FIRST YEAR**

#### **Spring Semester REQUIRED COURSES:**

		UNITS	In Progress	Completed Grade
†	DMI 10                      Intro to Radiologic Technology	3		
†	DMI 403                     Cross-Sectional Anatomy	3		
<b>Subtotal Units</b>		<b>6</b>		

#### **Summer Semester REQUIRED COURSES:**

†	DMI 20                      Intro. to Radiologic Physics	3		
<b>Subtotal Units</b>		<b>3</b>		

#### **Fall Semester REQUIRED COURSES:**

†	DMI 11                      Radiographic Techniques	1		
†	DMI 12                      Contrast Fluoroscope and Radiographic Procedures	3		
†	DMI 21                      Applied Radiological Physics	2		
†	DMI 30                      Positioning for General Diagnostic Rad	3		
<b>Subtotal Units</b>		<b>9</b>		

#### **Winter Session REQUIRED COURSE:**

†	DMI 40A                     Clinical Radiology	2.5		
<b>Subtotal Units</b>		<b>2.5</b>		

#### **Spring Semester REQUIRED COURSES:**

†	DMI 24                      Radiation: Biology & Protection	3		
†	DMI 31                      Positioning for Cranial Radiography	3		
†	DMI 40B                     Clinical Radiology	7.5		
†	DMI 60                      Radiologic Pathology	3		
<b>Subtotal Units</b>		<b>16.5</b>		

#### **SECOND YEAR**

#### **Summer Session\*\* REQUIRED COURSES:**

†	DMI 40C                     Clinical Radiology	6		
<b>Subtotal Units</b>		<b>6</b>		

**Fall Semester REQUIRED COURSES:**

†	DMI 15	Computer Applications in Radiology	3		
†	DMI 40D	Clinical Radiology	11		
†	DMI 222	Venipuncture for Medical Imaging	.5		
<b>Subtotal Units</b>			<b>14.5</b>		

**Winter Semester REQUIRED COURSES:**

†	DMI 61	Fluoroscopy	2		
<b>Subtotal Units</b>			<b>2</b>		

**Spring Semester REQUIRED COURSES:**

†	DMI 14	Trends & Self-Assessment in Rad. Tech.	3		
†	DMI 40E	Clinical Radiography	11		
<b>Subtotal Units</b>			<b>14</b>		
<b>TOTAL UNITS in Program</b>			<b>73.5</b>		
<b>Prerequisite Courses</b>			<b>10</b>		
<b>TOTAL UNITS (including Prerequisites)</b>			<b>83.5</b>		

For graduation with an **Associate in Science (A.S.) Degree with a major in Diagnostic Medical Imaging:**

- Minimum Unit Requirements:** Any course that appears on a curriculum guide and the General Education Pattern (Plan A) may fulfill both major and general education requirements (Approved by College Curriculum Committee Spring 2012). For this degree, complete a minimum of 60 units in courses numbered 1-599. Please note that additional elective units may be required to meet this minimum based upon courses selected to fulfill General Education for the Associate Degree.

<b>Diagnostic Medical Imaging Major</b>	83.5 units
<b>General Education/A.S. §</b>	19 units

- Scholarship:** Maintain an **overall grade point average (GPA) of 2.0** ("C" average) based on all accredited college work applied to the degree, no matter where completed. For this **field of concentration, complete each course above with a grade of "C" or better**, or "P" if course is graded on a P/NP basis.
- Residence for the Degree:** Complete at least 12 semester units of the required 60 semester units in residence at Long Beach City College in order for the college to grant an Associate of Arts and/or an Associate of Science Degree.
- Residence for the Field of Concentration:** Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 42 units** of the required 83.5 must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included.
- General Education and Proficiency Requirements:** Complete the required A.A./A.S. General Education and Proficiency requirements, otherwise known as "Plan A". For Plan A requirements, refer to the general catalog or view it online at <http://osca.lbcc.edu>.
- Complete and submit the degree application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu/>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu>) and click the "Important Dates" link to view the actual deadline for each semester.

\*The requirements for general education/proficiency and the field of concentration (major) need to be from the same catalog year. This catalog year may be any year between the year of initial enrollment to the present, provided continuous enrollment is maintained throughout. See the catalog for definition of "continuous enrollment".

For both the **Associate in Arts** and the **Certificate of Achievement**, the following courses are recommended, **BUT ARE NOT REQUIRED** to earn either.

**RECOMMENDED but not required courses:**

†	DMI 62	Mammography	3.5		
	LEARN 11	Learning and Academic Strategies	2		

**Program of study leading to:  
Certificate of Achievement**

**REQUIRED COURSES**—Complete the 83.5 units of required courses as listed in the Associate Degree requirements box on the first page.

<u>REQUIRED COURSES</u>	TOTAL UNITS	83.5	In Progress	Completed

For graduation with a **Diagnostic Medical Imaging Certificate of Achievement**:

1. Complete each of the **REQUIRED COURSES** listed above with a minimum cumulative grade point average of 2.0 (“C” average, and complete all DMI, AH, and ANAT courses with a grade of “C” or better.
2. Complete fifty percent (50%) or more of the unit requirements for this field of concentration in residence; this means at **least 42 units** of the required 83.5 must be **completed at Long Beach City College**. Credit earned by exam, where applicable, may be included.
3. Complete and submit the certificate application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu/>. Refer to the Schedule of Classes (<http://schedule.lbcc.edu/>) and click the “Important Dates” link to view the actual deadline for each semester.

Note: A Diagnostic Medical Imaging Sciences student must obtain a minimum of an Associate Degree, but the degree may be earned from another accredited institution. Students must have official transcripts on file in the Admissions and Records Office.

**Additional Program Information**

***Clinical Education***

The following modern medical centers in the community are used as extension campuses for the Clinical Education Courses:

Lakewood Regional Medical Center	Saint Francis Medical Center
Los Alamitos Medical Center	Saint Mary Medical Center
Long Beach Memorial Medical Center	Veterans Affairs Medical Center

***Cost of Program***

Students purchase their own books and uniforms and pay a student body fee. The college has no dormitory facilities; students must provide for their own living expenses and transportation. Limited educational grants and loan funds are available.

ESTIMATED expenses for the two year program:

Books and Supplies	\$750	C.S.R.T. Membership (optional)	\$50
Student Body Fees	\$20/sem.	Parking Fees	\$25/sem.
Uniforms	\$300	ARRT Exam	\$200
Graduation Expenses	\$500	CRT Exam	\$425
Enrollment Fees:	\$26/unit	Health Fee	\$17/sem.
A.S.R.T. Membership (optional)	\$75	Malpractice Insurance	\$20/sem.
Background Check: (Prior to beginning the clinical practicum—DMI 40A---, all students must submit a recent background check which is obtained at their own expense).			\$75

***Accreditation***

Long Beach City College is fully accredited by the Western Association of Schools and Colleges. The program is approved by the American Registry of Radiological Technologies and the AART.

\*Eligibility for the ARRT examination requires the candidate to complete an ARRT Accredited Radiology Program, possess a minimum of an Associate Degree, and be of good moral character. Conviction of a misdemeanor or felony may disqualify the candidate. An Ethics pre-application review may be pursued by contacting the ARRT at [www.ARRT.org](http://www.ARRT.org).

**Program of study leading to:  
Certificates of Accomplishment**

**Certificate: Computed Tomography 4045**

**Note:** All courses must be completed within three (3) years of starting the program

<u>REQUIRED COURSES</u>		UNITS	In Progress	Completed Grade
†	DMI 403	Cross-Sectional Anatomy	3	
†	DMI 404	MRI/CT Pathology	3	
†	DMI 405A	MRI Clinical Practicum	2.5	
†	DMI 405B	MRI Clinical Practicum	2.5	
†	DMI 406	Computed Tomography Physics	3	
†	DMI 407	Computed Tomography Procedures	3	
<b>TOTAL UNITS</b>		<b>17</b>		

**Certificate: Magnetic Resonance Imaging Technologist 4613**

**Note:** All courses must be completed within three (3) years of starting the program.

<u>REQUIRED COURSES</u>		UNITS	In Progress	Completed Grade
†	DMI 401	Physical Principles of MRI	3	
†	DMI 402	Magnetic Resonance Imaging Procedures	3	
†	DMI 403	Cross-Sectional Anatomy	3	
†	DMI 404	MRI/CT Pathology	3	
†	DMI 405A	MRI Clinical Practicum	2.5	
†	DMI 405B	MRI Clinical Practicum	2.5	
<b>TOTAL UNITS</b>		<b>17</b>		

For graduation with a **Certificate of Accomplishment:**

1. Complete the above required courses with a minimum grade of "C", or P if course is graded on a P/NP basis.
2. Fifty percent (50%) or more of the required units must be completed in residence at LBCC.
3. Complete and submit the certificate application form to the Admissions and Records office during your final semester of course work. These forms are available in the Admissions and Records office, or online at <http://admissions.lbcc.edu/>.

**Note:** Applicants must possess a current ARRT certificate in either Radiology, Sonography, Radiation Therapy, or Nuclear Medicine prior to admission.

**Career Opportunities**

This field of concentration is designed to prepare the student for Certification by the State Department of Health Services, Radiological Health Section, and Registration by the American Registry of Radiological Technologists after testing. The AART is the national testing/registration body ([www.ARRT.org](http://www.ARRT.org)). The end objective is to prepare students for employment as practicing medical imaging professionals in Acute Care Hospitals, Medical Clinics and/or private offices.

NOTE: An applicant should contact the ARRT to determine if he or she will be disqualified due to the conviction of a felony or misdemeanor.

**Program Mission and Outcomes**

The Diagnostic Medical Imaging Program at Long Beach City College is dedicated to providing high-quality education and clinical practicum to qualified students. It is responsive to the diverse needs of the local medical community. It specializes in the education and training that lead to entry-level employment as a competent, ethical health care professional, and an Associate of Science Degree. The program emphasizes the necessity of professional development and life-long learning.

Program Student Learning Outcomes:

- Demonstrate the ability to attain the Institutional Student Learning Outcomes (ISLOs).
- Diagram the photographic and digital process and define the technical factors utilized in medical image formation.
- Distinguish the fundamental structure of matter, diagram the production of x-rays, and examine how different radiographic techniques effect the resulting image on a radiograph.
- Assess how radiation effects body systems, differentiate between different types of radiation and their effects on human tissue, and formulate ways to decrease exposure.
- Manage proper patient positioning of the skeletal system, cranium, and viscera to achieve industry standard radiograph.
- Demonstrate ability to properly use all equipment required to produce a diagnostic radiograph; produce an industry standard and diagnostic radiograph.
- Demonstrate understanding of the knowledge and skills necessary to function as professional, ethical, accurate, and reliable members of the Radiology health care team.

## **Legend**

† This course has a prerequisite. Prerequisite courses must be complete with at least a “C” or “P” grade. Refer to the General Catalog (<http://www.lbcc.edu/cat/index.html>), the Schedule of Classes (<http://schedule.lbcc.edu/>), or the online Credit Course Outline (<http://wdb-asir.lbcc.edu/coursecurriculum/coursedetails/>) for specific prerequisite information.