ASRT Curricula-Bridging Examples

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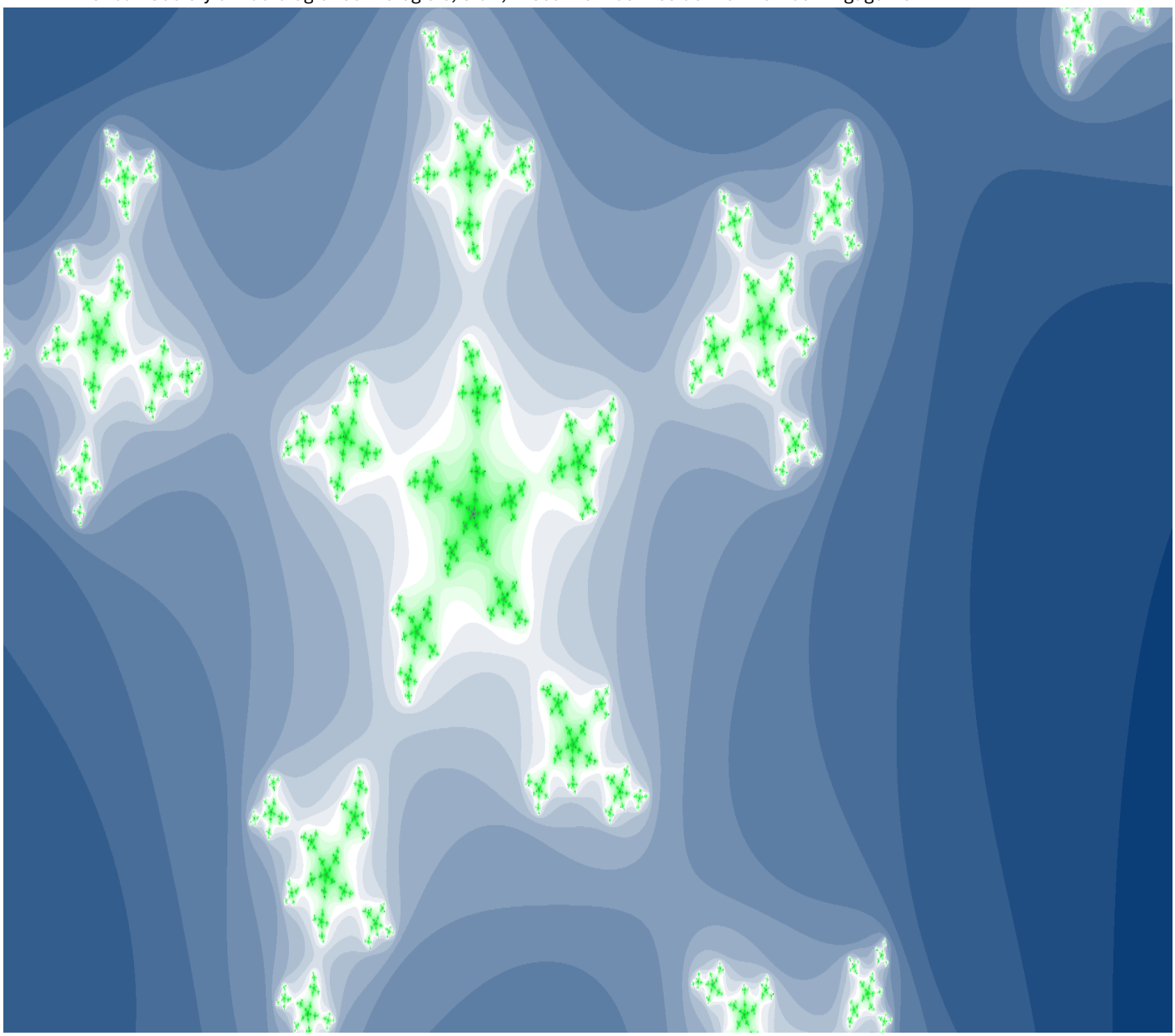

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Introduction

In February 2024, the ASRT, American Registry of Radiologic Technologists and Joint Review Committee on Education in Radiologic Technology co-hosted the Consensus Committee on the Future of Medical Imaging and Radiation Therapy. The meeting resulted in several goals to address the current workforce shortages. Forty-five leaders in medical imaging and radiation therapy participated in the meeting, including managers, educators, clinicians from each of the imaging and therapeutic disciplines, industry representatives, and physicians. In addition to the host organizations, 15 other organizations were also represented at the event. In June 2024, ASRT published a white paper to summarize recommendations from the meeting, including:

- Raising awareness, visibility and respect for the profession.
- Articulating career pathways.
- Creating a pipeline with education programs.
- Building a career ladder for advancement and mentorship.
- Expanding opportunities for education and training that meet the emerging needs of students.
- Sharing frameworks and tools to improve workplace satisfaction, employee engagement and recognition.[1]

As a result of the Consensus Committee meeting and white paper, the medical imaging and radiation therapy profession is defining educational preparedness and clinical competency. End to end and throughout the profession, ASRT members set these standards, as opposed to other organizations and governmental agencies defining the profession.

The purpose of this document is to spotlight educational programs that offer a bridge from the imaging assistant curriculum to the limited x-ray machine operator curriculum to the radiography curriculum. The American Society of Radiologic Technologists is highlighting these examples so that medical imaging and radiation therapy programs can consider this pathway if appropriate institutionally.

About the ASRT Curricula

The goal of each curriculum document is to outline a common body of knowledge that is essential to the particular imaging or therapeutic science. As the radiologic science profession evolves, the curricula must evolve with it.

Curriculum development and maintenance projects are collaborative efforts; educators, subject matter experts and the general professional community all play a role. The ASRT convenes project workgroups to develop new curricula and to perform periodic updates to existing curricula. Workgroup members are recruited from ASRT member volunteers and typically include practicing technologists, subject matter experts and educators.

Work conducted by curricula workgroups involves inspection of existing documents, sharing of research data, collegial exchange of suggestions for proposed curriculum enhancement and editing of existing materials. The result is the development of a draft document that is posted on the ASRT website to give the professional community an opportunity to review and comment. Following the period of open comment, a final draft is prepared for formal recognition.

[1] ASRT White Paper From the 2024 Consensus Committee on the Future of Medical Imaging and Radiation Therapy. June 2024.

Members of ASRT chapter steering committees vote to formally adopt newly developed or recently revised curricula. Ballots are cast by members of the Chapter Steering Committee on Education and the chapter steering committee most aligned with the curriculum under consideration.

For example, members of the chapter steering committees on education and computed tomography would be involved in voting to adopt revisions or updates to the ASRT Computed Tomography Curriculum. If the chapter steering committees vote for adoption, the curriculum becomes an official ASRT document.

It should be noted that the ASRT has no statutory authority to mandate that educational programs comply with the content of an official ASRT curriculum. ASRT curriculum documents are an expression of what the professional community supports as essential for the educational preparation of individuals seeking entry into the profession or seeking to advance their scope of practice.[2]

The Joint Review Committee on Education in Radiologic Technology and the American Registry of Radiologic Technologists can impose expectations on educational programs to comply with instructional content that is aligned with a nationally recognized curriculum and can require that candidates seeking professional certification have completed an accredited program of study that, through the accrediting process, has demonstrated compliance with a nationally recognized curriculum.

Background

Some educational programs offer pathways for individuals to progress from imaging assistant to limited technologist and then to registered technologist throughout their career. These opportunities provide cost-effective options for students and outline obvious bridges with different on- and off-ramps. Students who exit the bridge can still be part of the profession, earn money and have a career. This framework allows educational programs to meet students where they are in their lives and careers while ensuring a rigorous, high-quality education.

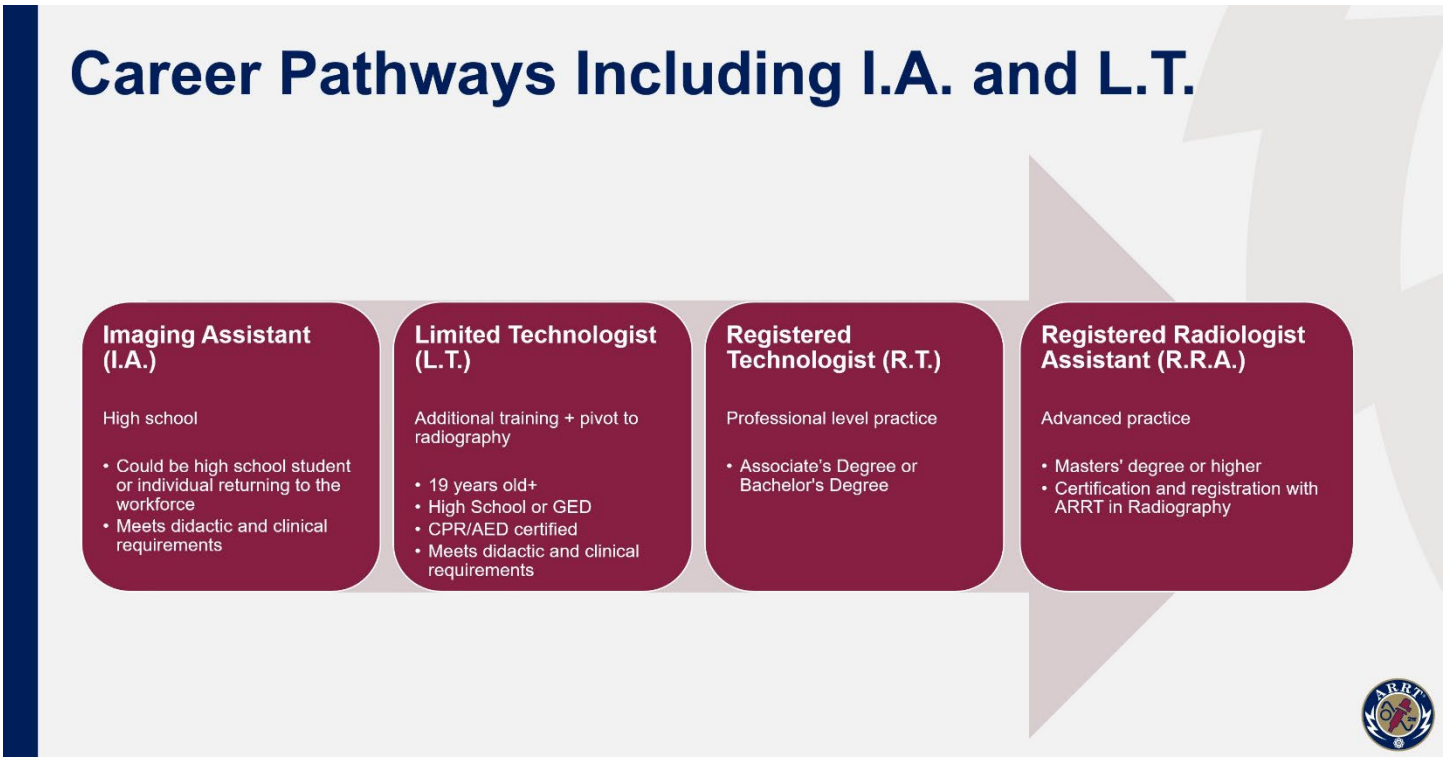
This document outlines examples from two different educational programs. In these settings, the student groups have very clear delineations of clinical goals and are seen as separate, distinct student groups in the context of their clinical sites. One institution sends limited x-ray machine operator students to clinical rotations in imaging centers and outpatient locations while radiography program students gain clinical experience in hospitals and tertiary care facilities. Another program collaborates with surrounding colleges to communicate about and share clinical sites with other educational institutions while delineating different student groups to different areas within a clinical site.

For these educational programs, bridging curricula has provided an opportunity to maximize institutional resources by leveraging existing resources — such as simulation labs — and integrating part-time faculty for career development as educators.

Providing quality education with demonstration of clinical competency for limited-scope operations provides a path for applicants to advance in their roles and prepares students for careers in the profession. In designing such programs, it is important to clearly delineate different student groups to ensure that data collection is distinct for accreditation purposes.

[2] Educators ASRT Curricula. Accessed June 11, 2025.

Medical Imaging and Radiation Therapy Career Pathways as Outlined by the American Registry of Radiologic Technologists in 2025



Health care professions throughout the United States have step-by-step ladders for achievement and skills. Creating this hierarchy of skills builds professionalism and allows students to see that they have limitless opportunities within the medical imaging and radiation therapy profession. A student could start as an imaging assistant and grow to become a registered radiologist assistant, demonstrating a full career arc of development. These career opportunities offer flexibility and adaptability in options, pathways and promotability while offering logical options to sustain learning and skill development throughout a career. By showing people that there is a path, medical imaging and radiation therapy professionals define their own standards for educational preparedness and clinical competence.

Terms within the following examples are specific to these states, institutions, and educational programs.

Example 1: Minnesota State Community and Technical College

The limited scope in radiography program in Minnesota contains curriculum and competency assessments that meet the state requirements for training in Minnesota and North Dakota. Both states need limited-scope operators to be educationally prepared and clinically competent. Rural clinics and hospitals need LSRs who can work independently to provide optimal basic x-ray exams that support patient care.

Limited Scope Radiography, Diploma - 46 credits

About.this.program

The limited-scope radiography program prepares students to become competent entry-level limited-scope radiographers. The limited-scope radiographer works under the direction of a health care provider and communicates with and positions patients for specified types of radiography examinations. The limited-scope radiographer provides quality care to patients; manipulates radiographic equipment and accessories; selects and adjusts technical factors; provides radiation protection for patients, self and others; obtains diagnostic images; performs image evaluation; and carries out activities associated with equipment quality control. Students are equipped with the knowledge and skills necessary to perform a variety of radiography exams on patients in various health care settings.

Program.outcomes

1. Model professional behaviors and perform duties within the ethical and legal boundaries of a limited-scope radiographer.
2. Demonstrate use of critical thinking and independent judgment.
3. Conduct and participate in quality improvement and quality control tasks.
4. Use compassion and interpersonal communication skills with patients, members of the health care team and others.
5. Manipulate radiographic equipment and accessories in the pursuit of quality radiographic images.
6. Demonstrate appropriate image acquisition and positioning techniques to obtain quality radiographic images.
7. Evaluate images for image quality and determine quality improvement methods.
8. Apply radiation protection and safety practices to patients, self and others.
9. Use patient care skills and monitoring techniques.
10. Participate in lifelong learning activities as required by the profession.

Radiologic Technology, Associate of Applied Science - 79 credits

About.this.program

The radiologic technology program prepares individuals to perform various radiologic procedures. The radiologic technologist instructs and positions patients, manipulates radiographic equipment, adjusts exposure factors, provides radiation protection for patients and self, develops radiographic images, evaluates the quality of finished radiographs and carries out activities associated with quality control. The student radiologic technologist carries out these functions under the supervision or upon the direction of a registered radiologic technologist. Graduates of the radiologic technology program are eligible for the national certification exam administered by the American Registry of Radiologic Technologists. Successful completion of this exam qualifies the graduate as a registered tadiologic technologist.

Program.outcomes

1. Practice radiation protection for the patient, self and others by applying the concepts of As Low As Reasonably Achievable (ALARA).
2. Apply positioning skills.
3. Demonstrate patient care skills.

4. Exercise independent judgment in areas of exposure factor manipulations involving all technical factors and equipment for procedures routinely performed in the clinical setting.
5. Evaluate radiographs for appropriate anatomy, positioning and image quality.
6. Conduct him/herself in a professional manner and abide by the Code of Ethics as outlined by the American Registry of Radiologic Technologist.
7. Evaluate the value of professional advancements.
8. Communicate effectively in both medical and professional relationships.

Accreditation

Minnesota State Community and Technical College is accredited by the Higher Learning Commission, a regional accreditation agency recognized by the U.S. Department of Education. The Higher Learning Commission, 230 South LaSalle Street, Suite 7-500 Chicago, Illinois 60604-1411, ncahigherlearningcommission.org, (312)263-0456/(800)-621-7440

Requirements for the Limited Scope Radiographer, Diploma and Radiologic Technology, Associate of Applied Science

Course	Credits
BIOL2260 - Human Anatomy and Physiology I	3
COMM1140 - Interpersonal Communication	3
LSR1100 - Introduction to Limited Scope Radiography and Patient Care	3
LSR1120 - Image Production I	4
LSR1140 - Radiation Protection	3
LSR1160 - Radiographic Procedures I	5
LSR1220 - Image Production II	3
LSR1230 - Imaging Equipment and Quality Control	3
LSR1240 - Radiobiology	2
LSR1260 - Radiographic Procedures II	4
LSR1280 - Radiographic Clinical I	4
LSR1380 - Radiographic Clinical II	7
RADT1102 - Fundamental Concepts of Radiologic Technology	2

Course	Credits
BIOL2260 - Human Anatomy and Physiology I	3
BIOL2262 - Human Anatomy and Physiology II	3
COMM1140 - Interpersonal Communication	3
MATH1114 - College Algebra	4
PHYS1105 - Fundamental Concepts in Physics	3
RADT1102 - Fundamental Concepts of Radiologic Technology	2
RADT1112 - Introduction to Radiologic Technology and Patient Care	4
RADT1116 - Radiographic Procedures I	5
RADT1124 - Radiographic Procedures II	4
RADT1133 - Principles of Radiobiology	4
RADT1140 - Radiographic Imaging	4
RADT1146 - Radiographic Procedures III	4
RADT1180 - Radiographic Clinical I	5
RADT1190 - Radiographic Clinical II	5
RADT2101 - Radiographic Clinical III	4
RADT2110 - Radiographic Clinical IV	5
RADT2120 - Radiographic Clinical V	5
RADT2130 - Radiographic Clinical VI	5
RADT2224 - Imaging Equipment	4
RADT2280 - Radiologic Technology Registry Review	2

Bridging Limited Scope to Radiologic Technology

The limited scope radiographer program requires students to successfully complete the courses included in the program plan to receive the LSR diploma and apply to bridge to the radiologic technologist program. In addition to those courses, students must also complete the prerequisites included in the RT program plan. There are three courses they need to complete before bridging into the RT program: college algebra, fundamentals of physics, and human anatomy and physiology II. Students may bridge into the R.T. program in the fall following the completion of the courses listed. Bridge students will take two additional classes: a radiation safety class that includes fluoroscopy and radiology procedures class that includes education for special modalities and venipuncture. These courses provide content that matches the education that RT program students receive. LSR bridge students who bridge may drop may decide to drop out of the bridge program and work as an LSR. LSR students who decide to work may apply to bridge at a later date. Admission to the bridge program is based on GPA, which is calculated based on LSR course classes and prerequisite courses included for both LSR and RT programs.

Example 2: Orange Coast College, California

Located in California, Orange Coast College undertook the limited x-ray machine operator approach through California's existing limited permit. From the beginning, Orange Coast College aimed to incorporate as much of the existing curriculum into the new program to minimize costs and improve opportunities for bridging limited permit students into the full certification program if they chose to return to school. When Orange Coast College began work on the limited permit program, it already had in place an imaging assistant certificate that aligns with the ASRT's imaging assistant general curriculum.

The limited permit program is slated to start in the fall of 2026, and the imaging assistant certificate has been available since the fall of 2022. The full licensure program has been in place since 1955. To minimize costs to both students and the college, Orange Coast College was intentional in the selection of prerequisites and graduation requirements. Another aspect of the design is that each of the three programs offers its own off-ramp for students.

Requirements for Imaging Assistant

Course	Units
AlH A010 Health Occupations	0.5 units*
AlH A111 Medical Terminology	3.0 units*
AlH A115 Patient Care	2.0 units
RADT A100 Radiation Physics	2.0 units*
ENGL A100 or ESL A100	3.0 units**
A course from the Area A2 Communication and Analytical Thinking	3.0 - 4.0 units**
A course from Area D: Social and Behavioral Sciences	3.0 units**
Total units 16.5 to 17.5	
*These courses are prerequisites for the full licensure radiologic technologist program and the upcoming limited permit program. **This is a course in the general education sequence for the associate of science degree	

Requirements for Fully Licensed Associate of Science Radiologic Technology Program

Course	Units
Prerequisites	
AlH A010 Health Occupations	0.5 units*
AlH A111 Medical Terminology	3.0 units*
RADT A100 Radiation Physics	2.0 units*
BIO A221 Anatomy and Physiology	4.0 units
The GE requirements for the AS degree	15.0 units
Program.Requirements	
First semester	
AlH A115 Patient Care	2.0 units
RADT A105 Radiation Safety	1.0 units
RADT A165 Beginning Radiologic Practice	1.5 units
RADT A170 Radiographic Positioning and Technique	3.0 units
RADT A171 Clinical Lab 1	2.0 units
RADT A180 Radiographic Imaging	3.0 units
First winter intersession	
RADT A172 Clinical Lab 2	## units
Second semester	
RADT A175 Radiographic Positioning and Technique 2	3.0 units
RADT A176 Clinical Lab 3	7.0 units
RADT A185 Radiographic Pathology	2.0 units
RADT A195 Fluoroscopy	1.0 units
Summer intersession	
RADT A177 Clinical Lab 4	4.5 units
Third semester	
RADT A265 Principles of Digital Imaging and Computer Applications	2.0 units
RADT A270 Radiographic Positioning and Technique 3	2.0 units
RADT A271 Clinical Lab 5	7.0 units
Second winter intersession	
RADT A276 Clinical Lab 6	1.0 units
Fourth semester	
RADT A216 Advanced Patient Care	2.0 units
RADT A275 Radiographic Positioning and Technique 4	2.0 units
RADT A277 Clinical Lab 7	7.0 units
RADT A285 ARRT Board Preparation	1.0 units
RADT A290 Applied Physics and Quality Control	1.0 units
Total units 82.5 to 87.5	

Requirements for the Limited Permit Program

Course	Units
Prerequisites	
AlH A010 Health Occupations	0.5 units*
AlH A111 Medical Terminology	3.0 units*
RADT A100 Radiation Physics	2.0 units*
BIO A221 Anatomy and Physiology	4.0 units
These are the same as the Fully Licensed program with the exception of the general education requirements for the AS degree.	
Program.Requirements	
First semester – Limited	
AlH A115 Patient Care	2.0 units
RADT A105 Radiation Safety	1.0 units
RADT A165 Beginning Radiologic Practice	1.5 units
RADT A170 Radiographic Positioning and Technique	3.0 units
RADT A171 Clinical Lab 1	2.0 units
RADT A180 Radiographic Imaging	3.0 units
These are the same courses offered for the fully licensed program. The Limited Permit cohort will have their own cohort for labs throughout their program. This will include their own clinical rotations at urgent care and imaging centers where appropriate.	
First winter intersession	
RADT A172 Clinical Lab 2	2.0 units
Second semester	
RADT A143 Positioning 2	3.0 units
RADT A144 LXT Clinical 3	7.0 units
RADT A145 LXT Certification Review	1.0 units
Total units 35.0	
In this semester, there is a divergence between the programs. This will allow ‘bridging’ students to rejoin in the spring semester and easily transition between the programs. Additionally, it offers an offramp for students in the full program who might need to finish early.	

Conclusion

These examples of curricula that bridge with on- and off-ramps are meant to be a resource for educational programs navigating administrative and resource needs. As noted, these career opportunities offer flexibility and adaptability in their options, pathways and promotability, while offering logical options to sustain learning and skill development throughout a career.