

Indiana University Kokomo

Proposal for a Post-Baccalaureate Certificate Advanced Medical Imaging Technology

Concentrations in Ultrasound, Vascular Ultrasound, Echocardiography, Magnetic Resonance, Computed Tomography, Breast Imaging, PACS/ Radiology Management

Division of Allied Health

5/13/2015

I. Why is this certificate needed?

Medical Imaging Technologists are employed in a variety of settings. Graduates can be found in hospitals, imaging centers, clinics, physician offices, federal and state agencies, medical supply and equipment businesses, educational institutions, and veterinary services. Due to the rise in baccalaureate radiologic science degrees, the BS degree in Medical Imaging Technology (MIT) may not meet the needs of all individuals looking for further career development and opportunity. Local hospitals and other healthcare facilities face a shortage of qualified technologists. Indeed, many of these facilities frequently seek qualified individuals to fill positions in advanced imaging modalities. This certificate program would help alleviate this problem by educating workers locally, and in communities continually seeking candidates. Moreover, a post-baccalaureate certificate will allow technologists who already have a bachelor's degree an avenue to become board-eligible, highly qualified advanced modality technologists. Finally, a post-baccalaureate certificate will allow those international students who have a reciprocally recognized bachelor's degree in imaging the opportunity to expand their education beyond that level through recognizing their earned bachelor's degree, which is currently an obstacle within the educational system.

II. List the major topics and curriculum of the certificate.

Courses in the certificate program, aside from clinical rotations, will be offered at Indiana University Kokomo. The certificate core courses would meet simultaneously with the BS MIT courses as the subject matter would be identical. The major topics and courses in the certificate are listed below:

Professional Certificate Program Courses		
Summer II (clinical) - OPTIONAL	Course Number	Credit Hours
Clinical Practicum	AHLT-R 485	4
Total Credit Hours Summer		4
FALL		
Sectional Imaging Anatomy	AHLT-R 404	3
Advanced Diagnostic Imaging I	AHLT-R 405	3
Seminar: Advanced Med Imaging	AHLT-R 407	3
Clinical Practicum: Choose one of the following as outlined below	AHLT-R 48X	6
Total Credit Hours Fall		15
SPRING		
Advanced Diagnostic Imaging II	AHLT -R 406	3
Topics in Radiologic Sciences	AHLT-R 408	3
Clinical Practicum: Choose one of the following as outlined below (same modality as fall semester)	AHLT-R 48X	6
Total Credit Hours Spring		12
Clinical concentration options (AHLT-R48X)		

Vascular Imaging	AHLT-R 481	
CT	AHLT -R 482	
MRI	AHLT -R 483	
Ultrasound / Echo	AHLT-R 484	
Breast Imaging	AHLT-R 484	
Total Professional Certificate Program Hours	31 Optional*	27 Required*

*Some of the courses within the certificate may be waived depending on the undergraduate curriculum and the concentration chosen.

III. What are the admission requirements?

Students will be chosen by the Admissions Committee which includes the Coordinator/Director of the Medical Imaging Technology or designee, and the Chair of Allied Health or designee. Students must have completed a baccalaureate degree at an accredited institution (minimum GPA of 2.70 in all courses and in the mathematics and science courses). The degree should include courses in the sciences and some mathematics to meet at least some of the pre-requisites. The following pre-requisites are required for completion of the certificate program and may have been completed during undergraduate study:

Pre-requisite Courses	Course Number (at IU Kokomo)	Credit Hours
ARRT Certification	AHLT	Min. 48
Anatomy	A-215	4-5
Physiology	P-215	4-5
Physics and/or Chemistry**	Varies	Varies
Total minimum credit hours for pre-requisites		56

**** See MIT coordinator for assessment of any chemistry credits or general and/or radiography physics credits prior to enrolling in subsequent course(s).**

The Admissions Committee will select the number of students each year based on clinical site availability, provided such students meet the admissions criteria. Applications will be due on November 15 for priority consideration but will be accepted until all available clinical spots are filled.

For students who are missing pre-requisite courses, these courses can all be completed at IU Kokomo in one year (two regular semesters). Admission will be determined on a first come, first served basis after candidates applying for the BS in Medical Imaging Technology program are clinically placed.

IV. List the major student outcomes (or set of performance based standards)

Students graduating with a certificate in Medical Imaging Technology from IU Kokomo should demonstrate the following:

- ❖ Knowledge of the discipline and technical skills in the clinical setting in order to meet radiology standards.
- ❖ Be able to recognize errors and problems and to take appropriate actions to solve them.
- ❖ Ability to develop and follow a QA/QC plan.
- ❖ Professionalism and ethical behavior under all circumstances.
- ❖ Practice of safe imaging procedures including maintenance of the working environment and strict adherence to all safety rules and regulations.
- ❖ Graduates of the Certificate Program will be eligible to take the ARRT, ARDMS, or CCI national certification examination in chosen modality as applicable. These credentials are a requirement to work in various settings.

V. Explain how student learning outcomes will be assessed and describe the structure/process for reviewing assessment findings for the purpose of ensuring continuous improvement of the certificate.

Assessment of student learning outcomes will involve the following:

- ❖ Student learning outcomes will be assessed at least once annually in selected classes through examinations and/or assignments including but not limited to:
 - Patient care specific to chosen modality studied
 - Positioning, procedures, and appropriate anatomical recognition specific to chosen modality
 - Image evaluation specific to chosen modality
 - Principles and physics applied to image acquisition specific to chosen modality
 - Identification of pathological conditions specific to chosen modality
- ❖ Annual evaluation of the success rates with the national certification examinations and licensure requirements will be performed.
- ❖ Graduate follow up will be performed to include:
 - Completion rate
 - Program satisfaction
 - Job placement within 6 months of completion (standard requirement for imaging accreditation body)
- ❖ Employer survey will be performed once a year to include:
 - Satisfaction with employee(s) who have completed this certificate
 - Willingness/likelihood of hiring additional graduates

The Indiana University Kokomo Radiologic Sciences Department within the Division of Allied Health Sciences currently has an Advisory Committee. The Committee shall meet as often as necessary, but not less than once each academic year. The Committee is made up of Allied Health Science faculty, IU Kokomo Science faculty, BS Medical Imaging Technology alumni, Clinical Instructors, clinical affiliate department directors and communities of interest members to ensure all aspects and affiliates of the program are represented. The Advisory Committee will review assessment data on an annual basis and propose remedial measures if necessary.

VI. Describe the student population to be served.

There are many registered radiologic technologists who have obtained a baccalaureate degree unrelated to medical imaging as this degree has not always been available. In addition, BSRS (Bachelor's of Science in Radiologic Science) degrees are awarded at many institutions. Many of these individuals indicate a desire to advance their careers in the imaging field but find no avenue to accomplish this. It would be costly and time consuming to return for a second baccalaureate degree, especially when many pre-requisites would be redundant. A post-baccalaureate certificate would allow for career advancement, increased marketability, and higher earning potential. In addition, the preparation received would fulfill the healthcare community's needs for well-educated, quality entry level advanced modality technologists.

In addition, because IU Kokomo's Medical Imaging Technology undergraduate program currently has clinical sites located all over the state of Indiana, including but not limited to Fort Wayne, Elkhart, Merrillville, Lafayette, Lebanon, Zionsville, Seymour, Decatur County, Noblesville, Marion, and Huntington, a wide service area is being served. These would also be sites for the post-baccalaureate certificate. Technologists from all over the state can rest assured that enrollment in the IU Kokomo certificate will allow them to be clinically placed relatively and reasonably close to home and/or work.

Further, beginning in 2016, all individuals applying to take national certification exams in these modalities must prove they have had formal education specific for the modality credential being sought. No longer will registered radiologic technologists automatically qualify to take these exams. This certificate will permit those individuals to be qualified for the desired examination. Obtaining certification is crucial as reimbursement rates are dependent upon accreditation and accreditation is not awarded to those facilities without registered technologists in the various modalities.

Finally, international students who already have a bachelor's degree in the imaging sciences would qualify to enroll in this certificate. If the degree is recognized by the American Registry of Radiologic Technologists and is considered a baccalaureate degree, the process for admission to this certificate would allow an international student an avenue to continue education without having the obstacle of obtaining an additional bachelor's degree.

VII. How does this certificate complement the campus or departmental mission?

IU Kokomo's Mission Statement is the following:

The mission of Indiana University Kokomo, a regional campus of Indiana University, is to enhance the educational and professional attainment of the residents of north central Indiana by providing a wide range of bachelor's degrees, and a limited number of master's and associate degrees. Indiana University Kokomo is further dedicated to enhancing research, creative work, and other scholarly activity, promoting diversity, and strengthening the economic and cultural vitality of the region and the state through a variety of partnerships and programs.

As part of its Mission, IU Kokomo also has a Commitment Statement to Regional Engagement which is the following:

The campus community works with regional partners, including other educational institutions, to enhance the vitality of the region by promoting community engagement opportunities as a key campus strategy and by valuing service as a core component of faculty, student, and staff responsibilities and experiences.

As demonstrated above, the certificate program in Medical Imaging Technology would be very well aligned with these statements. Indeed, not only has the north central region of Indiana benefitted from the completion of the current undergraduate degree, the entire state of Indiana has benefitted. This certificate serves as an extension of the undergraduate program since the end result is a pool of well-educated technologists who are able to fill multi-modality imaging roles across the state and around the world. Furthermore, the undergraduate program has been in existence for nine years and has produced technologists who are or have been employed in more than 30 different hospitals, 6 different imaging/outpatient centers, 3 mobile imaging companies, 1 educational facility, 5 different states, and 3 different countries including the U.S. The impact of the program will only be strengthened by adding a post-baccalaureate option which provides technologists the ability and accessibility to pursue this educational background desired by employers. Moreover, there is no other post-baccalaureate of this nature known to be in existence at this time anywhere in the nation. This would be another “first” for this campus and the “City of Firsts”.

VIII. Describe any relationship to existing programs on campus or within the university.

The certificate program will coincide with the core BS MIT curriculum, offering the same concentrations. These courses are already offered; therefore, admittance of the certificate applicants will be bound only by the number of clinical sites available. In addition, the certificate will offer a seamless transition for students who have completed baccalaureate degrees at other Indiana University campuses.

The same concentrations would exist within the certificate as are available in the BS MIT degree. Those concentrations would need to appear on the transcript just as they do for the BS MIT degree in order for the graduates to qualify to take the various applicable national certification examination. The list of concentrations is included at the end of this proposal, as are the requirements for each specific area. However, some requirements may be waived depending on the courses the student completed in the qualifying undergraduate baccalaureate degree.

IX. List and indicate the resources required to implement the proposed program. Indicate sources.

No new resources would need to be purchased as the current BS MIT resources are present regardless of the number of students. No new equipment is needed as the current equipment would continue to be used regardless of the number of students. No reallocation of personnel is needed to implement this certification. Indeed, the courses are already offered at IU Kokomo as core BS MIT courses. No new sections of the courses would need to be offered as the post-baccalaureate students would enroll in the currently listed courses. Faculty are already teaching these courses and would not be required to add any sections but rather increase the enrollment caps on current courses at this time. Faculty currently recruit new clinical sites on a consistent basis and would continue to do so in order to place post-baccalaureate students clinically.

There are a number of benefits for this post-baccalaureate certificate including increased enrollment, opportunities for additional clinical affiliate relationships, and increased job opportunity/marketability potential for those completing while there are no additional expenses or investments required of the campus or institution.

X. Describe any innovative features of the program

The program features a very close collaborative relationship between IU Kokomo and multiple clinical affiliates. As in the BS MIT program, clinical instructors or preceptors at the clinical site are non-paid so no additional cost is incurred in this respect. Based on current experience with the MIT program, graduates are often hired prior to or soon after graduation and many of the clinical affiliate sites. This will deliver a program which will educate graduates in a hospital setting and make them highly qualified and employable. Moreover, no other post-baccalaureate of this nature is known to be in existence in the nation. Further, no new or additional faculty will be required which allows us to increase enrollment without increasing expenses. In these ways, we are continuing to strengthen our community and regional relationships as well as our campus momentum.

Proposal for Concentrations for the Post-Baccalaureate Certificate in Medical Imaging Technology

Division of Allied Health Sciences, Indiana University Kokomo

The B.S. Medical Imaging Technology (MIT) program at Indiana University Kokomo offers multiple concentrations of study from which to choose. The post-baccalaureate certificate will require the students to enroll in the same courses as the BS MIT degree and should therefore offer the same concentration options. It is vital to include the concentration on the transcript as it represents the differentiation of the learning experience and allows the graduate to apply for the applicable national registry examination.

The following breakdown of courses depicts the exact courses and credit hours involved in each concentration separate from general education, additional pre-requisites, and radiography coursework. These courses concentrate completely on material involved specific to each modality reflected. The Division of Allied Health Sciences requests consideration and that these concentrations are included in the post-baccalaureate certificate approval process.

As previously stated, some of the course requirements may be waived depending on the curriculum of the student's undergraduate degree and courses they have already completed.

Post-Bac Computed Tomography Concentration (27 credits)

R404 Sectional Anatomy (3 cr) R406 Diagnostic Imaging II (3 cr)
R405 Diagnostic Imaging I (3 cr) R408 Topics in Medical Imaging Technology (3 cr)
R407 Seminars in MIT (3 cr)
R485 Clinical Practicum (4 cr)* - optional
R482 Clinical Practicum: Computed Tomography (12 cr over two semesters)

Post-Bac Magnetic Resonance Concentration (27 credits)

R404 Sectional Anatomy (3 cr) R406 Diagnostic Imaging II (3 cr)
R405 Diagnostic Imaging I (3 cr) R408 Topics in Medical Imaging Technology (3 cr)
R407 Seminars in MIT (3 cr)
R485 Clinical Practicum (4 cr)* - optional
R483 Clinical Practicum: MRI (12 cr over two semesters)

Post-Bac Sonography Concentration (27 credits)

R404 Sectional Anatomy (3 cr) R406 Diagnostic Imaging II (3 cr)
R405 Diagnostic Imaging I (3 cr) R408 Topics in Medical Imaging Technology (3 cr)
R407 Seminars in MIT (3 cr)
R485 Clinical Practicum (4 cr)* - optional
R484 Clinical Practicum: Ultrasound (12 cr over two semesters)

Post-Bac Echocardiography Concentration (27 credits)

R404 Sectional Anatomy (3 cr) R406 Diagnostic Imaging II (3 cr)
R405 Diagnostic Imaging I (3 cr) R408 Topics in Medical Imaging Technology (3 cr)
R407 Seminars in MIT (3 cr)
R485 Clinical Practicum (4 cr)* - optional
R484 Clinical Practicum: Ultrasound (12 cr over two semesters)

Post-Bac Vascular Sonography Concentration (27 credits)

R404 Sectional Anatomy (3 cr) R406 Diagnostic Imaging II (3 cr)
R405 Diagnostic Imaging I (3 cr) R408 Topics in Medical Imaging Technology (3 cr)
R407 Seminars in MIT (3 cr)
R485 Clinical Practicum (4 cr)* - optional
R484 Clinical Practicum: Ultrasound (12 cr over two semesters)

Post-Bac Mammography/Breast Sonography Concentration (27 credits)

R404 Sectional Anatomy (3 cr) R406 Diagnostic Imaging II (3 cr)
R405 Diagnostic Imaging I (3 cr) R408 Topics in Medical Imaging Technology (3 cr)
R407 Seminars in MIT (3 cr)
R485 Clinical Practicum (4 cr)* - optional
R482 Clinical Practicum: Ultrasound (12 cr over two semesters)

Post-Bac PACS/Radiology Management Concentration (24 credits)

R404 Sectional Anatomy (3 cr) R406 Diagnostic Imaging II (3 cr)
B 366 Leadership in Healthcare (3 Cr.) R408 Topics in Medical Imaging Technology (3 cr)
R407 Seminars in MIT (3 cr) B 371 HR Management in Healthcare (3 cr)
H 355 Economics of Healthcare (3 cr) H 315 Consumer Health (3 cr)