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December 17, 2018

Dr. James D. Fielder  
Secretary  
Maryland Higher Education Commission  
6 North Liberty Street  
Baltimore, MD 21201

Dear Dr. Fielder:

Please accept this letter requesting the approval of the post Associate of Applied Science Certificate in Computed Tomography. This certificate program has been recommended through the college curriculum committee and approved by the president and Board of Trustees.

Please contact me should you have any questions and/or need further information. A check has been mailed with a hard copy of the letter and coversheet; a full report has been sent electronically.

Thank you for your time and consideration.

Sincerely,



Kristin L. Mallory, Ed.D.  
Vice President for Academic Affairs



### Cover Sheet for In-State Institutions New Program or Substantial Modification to Existing Program

Institution Submitting Proposal	Wor-Wic Community College
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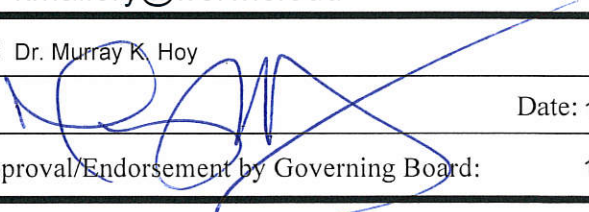
*Each action below requires a separate proposal and cover sheet.*

- New Academic Program
- New Area of Concentration
- New Degree Level Approval
- New Stand-Alone Certificate
- Off Campus Program
- Substantial Change to a Degree Program
- Substantial Change to an Area of Concentration
- Substantial Change to a Certificate Program
- Cooperative Degree Program
- Offer Program at Regional Higher Education Center

Payment Submitted: <input checked="" type="radio"/> Yes <input type="radio"/> No	Payment Type: <input type="radio"/> R*STARS <input checked="" type="radio"/> Check	Date Submitted: 12/17/2018
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Department Proposing Program	Radiologic Technology Program	
Degree Level and Degree Type	Lower Division Certificate	
Title of Proposed Program	Computed Tomography (CT) Certificate Program	
Total Number of Credits	19	
Suggested Codes	HEGIS: 520701	CIP: 510911
Program Modality	<input type="radio"/> On-campus <input type="radio"/> Distance Education ( <i>fully online</i> ) <input checked="" type="radio"/> Both	
Program Resources	<input type="radio"/> Using Existing Resources <input checked="" type="radio"/> Requiring New Resources	
Projected Implementation Date	<input type="radio"/> Fall <input checked="" type="radio"/> Spring <input type="radio"/> Summer Year: 2020	
Provide Link to Most Recent Academic Catalog	URL: <a href="https://www.worwic.edu/Programs-Courses/College-Catalog">https://www.worwic.edu/Programs-Courses/College-Catalog</a>	

Preferred Contact for this Proposal	Name:	Dr. Kristin L. Mallory
	Title:	Vice President for Academic Affairs
	Phone:	(410) 334-2813
	Email:	<a href="mailto:kmallory@worwic.edu">kmallory@worwic.edu</a>

President/Chief Executive	Type Name:	Dr. Murray K. Hoy
	Signature:	 Date: 12/14/2018
	Date of Approval/Endorsement by Governing Board:	11/08/2018

Revised 6/13/18

# **Computed Tomography (CT) Certificate- Wor-Wic Community College**

## **A. Centrality to Institutional Mission Statement and Planning Priorities**

### **A.1. Description of program:**

This application is for the purpose of offering advanced modality training for radiologic technology program graduates at Wor-Wic Community College. The Computed Tomography (CT) Certificate Program will provide radiologic technologists the didactic education and clinical practicum experience to obtain advanced certification as CT technologists. Upon completion of the CT didactic and clinical practicum program components, students will be eligible to sit for the American Registry of Radiologic Technologists (ARRT) CT certification examination.

The CT program is a certificate for individuals who are graduates from a Joint Review Committee on Education in Radiologic Technology (JRCERT) accredited radiologic technology program and who are certified radiologic technologists by passing the ARRT radiography examination. As an extension of the radiologic technology program, the CT program supports the institutional and radiologic technology program's mission. The radiologic technology program is accredited by the JRCERT and its mission has been approved as part of the reaffirmation of accreditation process. The mission of the radiologic technology program states the following:

“The radiologic technology program at Wor-Wic Community College provides students with a comprehensive didactic, laboratory, and clinical education that prepares graduates with the technical expertise for employment in the profession. Graduates from the radiologic technology program will exhibit the professional and personal attributes contributing to the delivery of quality care to patients in our community. The program supports the college's vision by developing an exceptional workforce through excellence in education.”

Developing a Lower Division CT Certificate will address a current gap in educating qualified technologists to perform CT procedures. If approved, the CT certificate program will be the first program of its kind on the Eastern Shore of Maryland, Delaware, and Virginia. The proposed CT certificate aligns with the institutional mission as demonstrated by the following:

“Wor-Wic is a comprehensive community college that enhances local economic growth by addressing the educational, training and workforce development needs of the residents of Worcester, Wicomico and Somerset counties.”

## **A.2. Support of strategic goals:**

The proposed CT certificate program supports the following strategic priorities for the college:

1. Strategic Priority One, Student Success: “Increase student success by delivering relevant courses and programs, providing flexible scheduling and diverse delivery methods . . .”

The CT certificate program will satisfy a current training gap present on the Eastern Shore of Maryland, Delaware, and Virginia as no other CT programs exist in these residential areas. In addition to supplying the training needs of the healthcare communities, the CT certificate program plans an online instructional delivery model for CT didactic courses. By doing so, the CT certificate program will satisfy the needs of radiologic technologists seeking advanced modality training while balancing full time work schedules.

The CT certificate program will “Strengthen the alignment of programs and courses with local employer needs” by providing radiologic technologists the didactic knowledge and clinical skills to practice as CT technologists in the healthcare arena.

2. Strategic Priority Three, Institutional Effectiveness: “Improve institutional effectiveness by expanding facilities and enhancing technology systems, processes and support.” A goal of Strategic Priority Three is to “Strengthen technology and related services in support of teaching and learning.”

The CT certificate program supports the use of technology in the delivery of quality education to students. It is proposed that the CT certificate program is instructed online. This delivery method supports the students’ understanding and use of technology which is necessary to perform CT exams, identify suspected technology errors that may impact the quality of imaging exams, and complete daily quality control testing to ensure equipment is acquiring optimal CT images.

## **A.3. Financial support for CT certificate implementation:**

The proposed CT certificate program will be funded by Federal Perkins funds and the institutional operational budgets. Perkins will cover the first three years of instructional faculty costs of the program. After the third year, the institutional operational budget will supply the financial support for CT certificate program instruction.

## **A.4. Institution’s commitment to proposed CT certificate program:**

Wor-Wic Community College is committed to the development and full implementation of the CT certificate program. The objectives of the CT certificate program support the college mission and goals. Wor-Wic outlines seven specific college goals. The CT certificate program College goals 2, 3, 4, and 7 as identified on the college website:

*College goal 2: “Offer courses and programs to prepare students for entry into the workforce, career advancement, licensure, certification, transfer to four-year colleges and universities, and personal development.”* Radiologic technologists receiving advanced modality training in CT have the opportunity for career advancement, earning higher wages for this specialization, and upon completion of the certificate program are eligible to become CT certified technologists by passing the ARRT CT examination.

*College goal 3: “Promote economic development by providing innovative programs and services that address the needs of business, government, nonprofits and other community groups.”* Expanding the radiologic technology program to include certificate modality training addresses the needs of the healthcare community served by Wor-Wic Community College. The radiologic technology program advisory committee identified CT training as an essential educational pathway for radiologic technology graduates. Additionally, the program advisory committee requested the development of other advanced modality training programs following CT such as MRI, Mammography, and Ultrasound be considered in future academic planning at the college.

*College goal 4: “Provide students with educational experiences and support services that help them achieve their goals through college completion and workforce preparation.”* The CT program is designed to promote student goal achievement through advanced modality training, providing promotion opportunities in the radiologic technology profession with newly acquired CT skills, and eligibility to obtain certification as a recognized CT technologist.

*College goal 7: “Acquire appropriate human, financial and technological resources to meet institutional needs.”* Through the institutional budgetary process, the college is dedicated to providing sufficient financial resources necessary to support the CT certificate program from conception to full implementation.

## **B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan**

### **B.1. Demonstrate Demand and Need for the Program:**

The CT certificate program will satisfy a regional and statewide need for advanced modality prepared radiologic technologists. Currently, only three community colleges offer a CT certificate program. Regionally, Wor-Wic will be the first community college to provide CT education on the Eastern Shore of Maryland, Delaware, and Virginia.

### **B.2. Program Need Consistent with the Maryland State Plan for Postsecondary Education:**

*Goal 2 Access:* The CT certificate program will be offered through an online instructional delivery modal providing access to interested students from Maryland, Delaware, and Virginia Eastern Shore regions.

*Goal 4 Innovation:* The Wor-Wic Community College CT certificate program supports the Innovation goal by pioneering the first completely online CT certificate available

regionally and statewide. The CT certificate program development will utilize technology to deliver course instruction to enrolled students throughout the local region and state.

The development of the CT certificate program provides for the needs of educationally disadvantaged students by offering an online option for completing didactic CT courses. Historically black institutions in the State of Maryland do not offer radiologic technology or CT education.

## **C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State**

### **C.1. Employment Opportunities**

CT technologists are radiologic technologists with advanced specialization in Computed Tomography. CT technologists are responsible for the preparation and administration of contrast media. Before completing injections, technologists must obtain informed consent and document the patient's pertinent medical history relevant to the CT exam. CT technologists perform venipuncture and monitor the patient for adverse reactions to the contrast media injection. In the CT modality, technologists must understand cross-sectional anatomy, identify pathologies, and alert the radiologist when critical findings are discovered.

Besides performing routine CT exams, certified CT technologists assist the radiologists in interventional CT guided procedures such as biopsies and drainages. CT is the gold standard for evaluating traumatic patient conditions. Therefore, CT technologists must assess the patient for shock and other medical emergencies that may occur in the CT suite.

CT technologists are a vital part of the healthcare team as CT exams are completed 24 hours a day; seven days a week in the hospital setting. Additionally, CT technologists are employed in urgent care facilities and outpatient offices providing CT services. According to Consumer Reports, "80 million CT scans are performed each year in the U.S." With the increasing need of CT exams used to diagnose pathologies, identify strokes and traumatic patient injuries, certified CT technologists are needed to provide the expertise in completing these scans.

### **C.2. Data analysis projecting market demand**

An occupation analysis of the market demand for radiologic technologists, including CT technologists, indicates a 14.7% increased job growth in the surrounding 7 county region between 2017 and 2025. An increase of 17.2% is the anticipated job growth for radiologic technologists in Maryland. Finally, a job growth increase of 12.8% is expected nationally for radiologic technologists. This data was obtained from an occupation overview, using the code 29-2034 for identifying radiologic technologists, on the EMSI Q3 2018 Data Set.

### **C.3. Educational and training needs over the next 5 years**

The Wor-Wic Community College CT Certificate program plans to enroll 16 prospective students annually into the curricular sequence. The program anticipates 14 graduates in each student cohort for a total of 70 CT prepared technologists over a 5-year period.

### **C.4. Current and Projected supply of prospective graduates**

1. The first group are existing radiologic technology students. Graduates from the radiologic technology program may directly progress into the CT program following graduation and successfully passing the ARRT certification exam.
2. The second group of students include existing radiologic technologists employed at our clinical affiliates. Individuals desiring an advanced certification can enroll into the CT program and complete the clinical practicum components at their area of employment.
3. The next group of prospective students include radiologic technologists located on the Eastern Shore of Maryland, Delaware, and Virginia seeking advanced modality education. With the online course delivery format, students residing in Wor-Wic's service region, surrounding counties, and across the state can take advantage of the opportunity to learn CT without traveling to the college campus.
4. The last prospective student population are those radiologic technologists who have completed cross-training into the CT modality but lack the structured education required for eligibility to sit for the ARRT CT certification examination.

## **D. Reasonableness of Program Duplication**

### **D.1. Similar programs in state or surrounding area**

There are currently no comparable CT certificate programs offered on the Eastern Shore of Maryland, Delaware, or Virginia. Only three community colleges provide CT training in Maryland. Below is a chart identifying the JRCERT accredited radiologic technology programs in Maryland, established CT certificate programs, and the instructional delivery method utilized by schools for CT education.

JRCERT Accredited Radiologic Technology Programs	CT Certificate Program	Instructional Delivery Method
Allegany College of Maryland	-----	-----
Anne Arundel Community College	-----	-----
Chesapeake College	-----	-----
CCBC Essex	YES	Hybrid Course Delivery
Fortis College	-----	-----

Hagerstown	YES	Classroom Delivery
Howard	YES	Appears as Classroom Delivery through Continuing Education
Montgomery College	----	----
Prince George's Community College	----	----
Johns Hopkins	YES	Classroom Delivery
Washington Adventist	----	----

## D.2. Justification for Proposed Program

Computed Tomography (CT) is an advanced imaging modality that can be pursued after earning certification as a radiologic technologist. CT technologists are in high demand as CT studies are completed 24/7 in hospitals and routinely completed at outpatient physician offices. As one of the busiest modalities in radiologic technology, vacant CT positions are available locally, across the state, and posted nationwide. According to the American Society of Radiologic Technologists (ASRT), the average salary of radiologic technologists is \$56,372 whereas the average salary of CT technologists is \$66,144. CT salaries increase according to the type of institution and time of day hours are worked at each facility. Therefore, obtaining education in CT and successfully passing the American Registry of Radiologic Technologists (ARRT) certification exam provides graduates with increased earning potential and marketability obtaining professional employment.

In July 2017, the ARRT modified the requirements for candidates seeking Computed Tomography certification. The ARRT now requires candidates to document at least 16 hours of structured education. Candidates must obtain a minimum of 1 CE credit or its equivalent in the following topics: patient care, safety, image production, and procedures (ARRT, 2017). With the addition of a structured education component, traditional cross-training practices are now insufficient in preparing candidates to take the ARRT CT exam.

Besides the introduction of structured education by the ARRT for candidates seeking post-primary CT certifications, The Joint Commission (TJC) has taken a position on the importance of structured education and certification of practicing CT Technologists. According to Main Motion C-16.02, The Joint Commission states, "Only medical imaging and radiation therapy professionals who have completed the appropriate education and obtained certification(s) as outlined in these standards should perform computed tomography procedures" (TJC, 2016). As a result, past CT cross-training methods are becoming obsolete requiring formal education, clinical practicum, and



assessment of CT exam performance before candidates are eligible to sit for the ARRT exam to obtain CT certification.

Developing a CT program will provide WWCC radiologic technology graduates an opportunity to become multimodality certified technologists. Currently, WWCC graduates are enrolling into CCBC Essex CT and MRI certificate programs. By providing a CT program, WWCC will help graduates maintain local employment while pursuing an additional credential in the radiologic technology profession.

## **E. Relevance to High Demand Programs at Historically Black Institutions**

The following historically black institutions in Maryland do not offer radiologic technology programs or CT education: Bowie State University, Coppin State University, Morgan State University, and University of Maryland Eastern Shore. The Wor-Wic Community College CT certificate program will not compete with any of the colleges identified above because this certificate is not currently offered at these institutions.

## **F. Relevance to the Identity of Historically Black Institutions**

Wor-Wic Community College serves a diverse student population seeking career advancement and training in healthcare professions. The radiologic technology and CT certificate programs are professionally defined disciplines and do not lend themselves to specific degree programs offered at four-year universities. The closest four-year degree alignment with the CT certificate program is the Bachelor of Science in Health Sciences degree offered from Coppin State University. An articulation agreement could be developed between Wor-Wic Community College and Coppin State University for radiologic technology and CT certificate program graduates to transfer credits into this Bachelor degree program.

## **G. Adequacy of Curriculum Design and Delivery to Related Learning Outcomes**

### **G.1. Establishment of Proposed CT Certificate Program and Program Oversight**

The CT certificate program was developed by the Department Head of Radiologic Technology. Its creation is based upon the current American Society of Radiologic Technologists (ASRT) CT curriculum, the American Registry of Radiologic Technologists (ARRT) certification exam, and the ARRT Computed Tomography Task Inventory. The Department Head of Radiologic Technology is responsible for providing supervision over the CT certificate program. Curricular development, program assessment, and evaluation of program effectiveness are the responsibilities of the Radiologic Technology Department Head.

Radiologic Technology  
Computed Tomography (CT) Certificate

CT Certificate Courses

<u>Spring</u>		<u>Credit Hours</u>
RAD 110	CT Patient Care and Safety	3
RAD 121	CT Clinical Practicum I	2
RAD 112	CT Advanced Sectional Anatomy	<u>3</u>
		8
<u>Summer</u>		
* RAD 113	CT Image Production and Evaluation	3
* RAD 122	CT Clinical Practicum II	2
* RAD 115	CT Imaging Procedures	<u>3</u>
		8
<u>Fall</u>		
* RAD 123	CT Seminar and Clinical Practicum III	<u>3</u>
		3
Total		19

**G.2. Educational Objectives and student learning outcomes**

The Computer Tomography (CT) certificate program at Wor-Wic Community College provides certified radiologic technologists with a comprehensive, didactic, and clinical CT education necessary for employment and/or career advancement in the healthcare industry. Below are the CT certificate program goals (PG), student learning outcomes (SLO), and means of assessment (MOA) as outlined in the CT certificate program assessment plan:

1. **PG #1:** Demonstrate clinical competence performing CT imaging procedures.
  - SLO #1:** Students will practice identifying anatomical structures and explain their positional relationships on CT exams.
    - MOA #1:** RDT 115 CT Imaging Procedures Brain Anatomy Assignment
    - MOA #2:** RDT 115 CT Imaging Procedures Neck/Spine Anatomy Assignment
  - SLO #2:** Students will select appropriate CT protocols for CT exams performed on particular patient age groups.
    - MOA #1:** RDT 113 CT Image Production and Evaluation Image Gently Assignment

**MOA #2:** RDT 113 CT Image Production and Evaluation Scan Parameters and Image Display Assignment

2. **PG #2:** Apply critical thinking and problem solving skills in the performance of emergent and non-emergent CT exams.

**SLO #1:** Students will evaluate the diagnostic quality of CT images.

**MOA #1:** RDT 112 Advanced Sectional Anatomy Chest Pathology Assignment

**MOA #2:** RDT 112 Advanced Sectional Anatomy Abdomen/Pelvis Pathology Assignment

**SLO #2:** Students will accurately select CT scan parameters for emergent clinical indications.

**MOA #1:** RDT 122 CT Clinical Practicum II CT Protocol Trauma Assignment

**MOA #2:** RDT 122 CT Clinical Practicum II CT Protocol CTA Assignment

3. **PG #3:** Exemplify professional behaviors according to the ARRT Standards of Ethics for the Radiologic Technology profession.

**SLO #1:** Students will educate patients about CT procedures.

**MOA #1:** RDT 110 Patient Care and Safety Patient Education Assignment

**MOA #2:** RDT 121 CT Clinical Practicum I ARRT Standards of Ethics Writing Assignment

**SLO #2:** Students will demonstrate the professional behaviors of a CT technologist.

**MOA #1:** RDT 123 CT Seminar and Clinical Practicum III Professional Development as a CT Technologist Assignment

**MOA #2:** RDT 123 CT Seminar and Clinical Practicum III Emerging CT Technologies Presentation

### **G.3. Institutional Assessment of Student Achievement in CT Certificate Program**

Student achievement of learning outcomes will be assessed by two Means of Assessment (MOA) per SLO at the program level annually and two MOAs per course objective bi-annually. The means of assessment are described above for each identified student learning outcome in the CT certificate program.

Student achievement and learning outcomes performance at Wor-Wic Community College is documented via the institution's planning and assessment software Nuventive

Improve. Program and course level assessment is conducted annually and results and analyses are entered into the Improve system throughout the year.

#### **G.4. CT Certificate Program Courses**

The CT certificate is a limited admission program. Prospective students must be graduates from JRCERT accredited radiologic technology programs and certified radiologic technologists. Students enrolled into the CT certificate program must successfully pass a background check and drug screen to complete the clinical practicum curricular component. The following includes the CT certificate program course descriptions and credit allocations:

##### **Computed Tomography (CT) Certificate Program Course Descriptions**

#### **RAD 110 CT Patient Care and Safety**

**3 Credits**

This course introduces students to patient care and assessment for Computed Tomography (CT) imaging exams. Contrast administration and venipuncture techniques are explained. Students will learn contrast administration precautions and management of medical emergencies in the CT suite. Radiation safety and minimizing patient radiation exposure for CT exam protocols is explained. *Hours: 39 Online Lecture Hours.*

*Prerequisite: Graduate of a JRCERT accredited radiologic technology program, certified by the American Registry of Radiologic Technologists (ARRT), and admission into the CT certificate program. Course Fee: \$50. Usually offered in the spring.*

#### **RAD 112 CT Advanced Sectional Anatomy**

**3 Credits**

This course introduces students to advanced sectional anatomy concepts. Students will evaluate anatomical structures visualized in the axial, coronal, and sagittal planes. Cross sectional anatomy of the face, head, neck, spine, chest, abdomen, and pelvis are reviewed. Sectional anatomy of the musculoskeletal system is explained. Pathologies demonstrated in cross section are described. *Hours: 39 Online Lecture Hours.*

*Prerequisites: Graduate of a JRCERT accredited radiologic technology program, certified by the American Registry of Radiologic Technologists (ARRT), and admission into the CT certificate program. Course Fee: \$50. Usually offered in the spring.*

#### **RAD 113 CT Image Production and Evaluation**

**3 Credits**

This course explains the image formation, equipment operation, and scanning principles related to Computed Tomography (CT). Students will learn imaging and data acquisition parameters according to specific CT protocols. Image processing techniques including retrospective reconstruction and post-processing views such as 3D-reconstruction and volume rendering are described. Image quality and display, artifact recognition, and CT informatics are instructed in this course. *Hours: 39 Online Lecture Hours. Prerequisites: RAD 110, RAD 112, and RAD 121 with grades of "C" or permission of department head. Course Fee: \$50. Usually offered in the summer.*

### **RAD 115 CT Imaging Procedures**

**3 Credits**

This course explains Computed Tomography (CT) imaging procedures of the head, neck, chest, abdomen, pelvis, spine, and the musculoskeletal system. Protocol considerations according to the patient age, clinical indication, and medical diagnosis are discussed. Post-processing image functions and advanced imaging techniques are explained. *Pathology diagnosed according to specific CT procedures performed are described.*  
*Hours: 39 Online Lecture Hours. Prerequisites: RAD 110, RAD 112, and RAD 121 with grades of "C" or better or permission of department head. Course Fee: \$50. Usually offered in the summer.*

### **RAD 121 CT Clinical Practicum I**

**2 Credits**

Students will practice Computed Tomography (CT) imaging principles and clinical skills under the direct supervision of certified CT technologists and preceptors. Patient preparation, scanning, and evaluation of CT images is part of this learning experience. Image display, processing, and artifact recognition are reviewed during clinical rotations. Students will practice venipuncture and monitor contrast injections according to the practice standards of the clinical affiliate. The American Registry of Radiologic Technologists (ARRT) expects students to complete 125 CT exams/procedures in specific categories as outlined in the ARRT Computed Tomography clinical requirements. The CT Clinical Practicum I provides students the opportunity to complete CT imaging exams in a supervised clinical setting. *Hours: 208 Clinical Hours.*  
*Prerequisite: Graduate of a JRCERT accredited radiologic technology program, certified by the American Registry of Radiologic Technologists (ARRT), and admission into the CT certificate program. Course Fee: \$50. Insurance: \$18. Usually offered in the spring.*

### **RAD 122 CT Clinical Practicum II**

**2 Credits**

This is the second in a series of CT Clinical Practicum courses. Students will practice Computed Tomography (CT) imaging principles and clinical skills under the direct supervision of certified CT technologists and preceptors. Patient preparation, scanning, and evaluation of CT images is part of this learning experience. Image display, processing, and artifact recognition are reviewed during clinical rotations. Students will practice venipuncture and monitor contrast injections according to the practice standards of the clinical affiliate. The American Registry of Radiologic Technologists (ARRT) expects students to complete 125 CT exams/procedures in specific categories as outlined in the ARRT Computed Tomography clinical requirements. The CT Clinical Practicum II provides students the opportunity to complete CT imaging exams in a supervised clinical setting. *Hours: 208 Clinical Hours. Prerequisites: RAD 110, RAD 112, and RAD 121 with grades of "C" or better or permission of department head. Course Fee: \$50. Insurance: \$18. Usually offered in the summer.*

### **RAD 123 CT Seminar and Clinical Practicum III**

**3 Credits**

This course prepares students to take the American Registry of Radiologic Technologists (ARRT) Computed Tomography (CT) exam. Students will review ARRT exam topics including patient care, safety, image production, and image procedures related to the CT modality. Upon completion of this course and the required clinical CT exams, students will be prepared to take the ARRT CT exam to become certified as a CT technologist. This is the third in a series of three clinical practicum courses that students will practice Computed Tomography (CT) imaging principles and clinical skills under the direct supervision of certified CT technologists and preceptors. The American Registry of Radiologic Technologists (ARRT) expects students to complete 125 CT exams/procedures in specific categories as outlined in the ARRT Computed Tomography clinical requirements. *Hours: 26 Online Lecture Hours. 104 Clinical Hours. Prerequisites: RAD 113, RAD 115, and RAD 122 with grades of "C" or better or permission of department head. Course Fee: \$50. Insurance: \$18. Usually offered in the fall.*

#### **G.5. General Education Requirements**

There are no general education courses required for the CT certificate.

#### **G.6. Specialized Accreditation and Certifications**

The radiologic technology program is nationally accredited through the Joint Review Committee on Education in Radiologic Technology (JRCERT). The CT certificate program is an extension of the radiologic technology program and does not require a separate accreditation. Graduates from the CT certificate program are eligible to sit for the ARRT CT certification exam.

#### **G.7. Contracts with other institutions**

There are no established contracts with other institutions for the instructional delivery of the CT certificate program.

#### **G.8. CT Certificate Program Curriculum and Program Information**

A CT certificate admission booklet will be developed and posted on the college website delineating the CT curricular sequence and clinical practicum requirements. The admission booklet will outline program admission procedures and the limited enrollment process.

CT certificate curriculum and program information will be clearly articulated and made available to students via the radiologic technology program website. A CT student handbook will be distributed to enrolled students outlining the curriculum, program expectations, and certificate completion requirements. Clinical practice standards and policies related to CT education will be included in the student handbook.

Student interest meetings will be held to explain CT certificate admission procedures and programmatic expectations. Once accepted into the CT certificate program, a student orientation meeting will provide further explanations to the enrolled student cohort.

### **G.9. CT Certificate Program Advertising, Recruitment, and Admission Materials**

The CT Certificate is an extension of the existing radiologic technology program. Prospective students will be directed to CT certificate information from the radiologic technology program webpage. The admission booklet, curricular sequence, and program effectiveness data will be posted on the college website. Additionally, information about the CT certificate program will be described on the radiologic technology department faculty websites.

Comparable with the radiologic technology program, the department head will hold prospective student meetings to review the CT certificate program admission requirements and program expectations. The Wor-Wic Community College marketing department will disseminate CT certificate information to communities of interest. The radiologic technology program advisory committee will be informed when the CT certificate program is approved and information about the program will be distributed by our clinical partners at their respective sites.

### **H. Adequacy of Articulation**

N/A

### **I. Adequacy of Faculty Resources**

The radiologic technology program consists of two full-time faculty members and a part-time clinical instructor. One radiologic technology full-time faculty member is the Department Head of the program and the second faculty member also serves as the Clinical Coordinator of the radiologic technology program. For CT certificate course instruction and to distribute the workload of the radiologic technology program, a new part-time faculty member will be requested. The new part-time faculty member will be certified in CT with a preferred additional certification in MRI for future course development. Besides instructing CT didactic courses offered in the certificate program, the new faculty member will coordinate the CT clinical practicum including managing clinical contracts for enrolled students. Additionally, the new part-time faculty member will assist the Department Head in the development of an MRI certificate program.

Faculty Member	Terminal Degree	Full or Part-time	Courses Taught
<p>Dr. Karie Solembrino</p> <p>Department Head and Professor of Radiologic Technology</p>	<p>Ed.D.</p> <p>Doctorate of Education – Specialization in Leadership and Management</p> <p>M.S.</p> <p>Master of Science in Education – Specialization in Postsecondary and Adult Education</p> <p>B.S.R.S.</p> <p>Bachelor of Science in Radiologic Sciences</p> <p>A.A.S.</p> <p>Associate of Applied Science in Radiologic Technology</p>	<p>Full-time</p>	<p>RAD 110 Patient Care and Safety</p> <p>RAD 112 Advanced Sectional Anatomy</p>
<p>New Faculty Member</p> <p>Instructor of Radiologic Technology</p> <p>CT and MRI Certified Preferred Credentials</p>	<p>B.S.R.S.</p> <p>Bachelor of Science in Radiologic Sciences</p>	<p>Part-time</p>	<p>RAD 113 CT Image Production and Evaluation</p> <p>RAD 115 CT Imaging Procedures</p> <p>RAD 121 CT Clinical Practicum I</p> <p>RAD 122 CT Clinical Practicum II</p> <p>RAD 123 CT Clinical Practicum III</p>

Wor-Wic Community College provides ongoing pedagogy training for faculty in the radiologic technology program. Training is obtained through college-sponsored faculty professional development events, periodic in-service training, and radiologic technology conferences. The operational and Perkins budgets allocate monies designated for



professional development conferences in leadership, assessment, and radiologic technology instructional methods.

All faculty teaching online are required to complete a Blackboard training program. These Blackboard learning modules include: Blackboard Fundamentals, Enhancing Communication and Student Learning, Assessing Learning, and the Blackboard Grade Center. Additional professional development learning modules located through the Wor-Wic Blackboard Instructor Training comprise the following: Building Courses, Monitoring Student Performance and Participation, and QM Self Review.

## **J. Adequacy of Library Resources**

CT certificate students have access to textbooks, educational journals, and reference materials relevant to the CT curriculum. Students may access the Wor-Wic Community College electronic library databases online and from the college campus. The media centers are staffed to provide students assistance locating pertinent journal articles for research assignments, helping students with citations and references, and distributing resources reviewing citation guidelines.

## **K. Adequacy of Physical Resources, Infrastructure and Instructional Equipment**

The CT certificate program didactic courses are planned for an online instructional delivery model. Physical resources for class instruction are not needed for introducing this certificate. Existing radiologic technology classroom space will be used for CT certificate student interest meetings. To develop online lectures and interactive student activities, the radiologic technology department will purchase Articulate Storyline software. The instructional technologist and instructional designer will provide collaborative support, helping the radiologic technology department head develop online CT courses in the existing faculty training lab located on the Wor-Wic Community College campus.

CT certificate students will access academic and technology support via the college website. The technology help desk assists students with Blackboard issues, password problems, and access difficulties. No new resources are necessary for the implementation of the CT certificate program.

## **L. Adequacy of Financial Resources**

Table 1 explains the financial resources for the CT certificate program. The budget allocations reflect a student cohort of 16 students enrolling annually into the program. Since the CT certificate program will be the first of its kind introduced on the Eastern Shore of Maryland, Delaware, and Virginia, the college anticipates a fully enrolled class as demonstrated in the table below. The identified credit hour rate estimates an approximate 3% increase during the projected five-year budget plan.

Table 2 demonstrates the CT certificate program expenditures. The college plans to hire a part-time faculty to assist with course instruction. The salary displays a 0.5 FTE allocation and is reflective of an average full time faculty salary budgeted at \$60,000. Additionally, the expenditures chart explains a negligible equipment expense. Equipment expenses are minimal due to the clinical practicum rotations completed at respective hospitals and outpatient facilities. The college will not accrue any significant expenses because CT equipment purchase is not required.

TABLE 1: RESOURCES					
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated funds	0	0	0	0	0
2. Tuition/Fee Revenue (c + g below)	53200	54416	55328	56240	57152
a. Number of F/T students	16	16	16	16	16
b. Annual tuition/fee rate	3325	3401	3458	3515	3572
c. Total F/T revenue (a * b)	53200	54416	55328	56240	57152
d. Number of P/T students	0	0	0	0	0
e. Credit hour rate	116	120	123	126	129
f. Annual credit hour	19	19	19	19	19
g. Total P/T revenue (d * e * f)	0	0	0	0	0
3. Grants, Contracts & other external sources	0	0	0	0	0
4. Other Sources	0	0	0	0	0
TOTAL (Add 1 - 4)	53200	54416	55328	56240	57152

TABLE 2: EXPENDITURES					
Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	29604	29604	30196	30196	30800
a. #FTE	0.5	0.5	0.5	0.5	0.5
b. Total salary	27500	27500	28050	28050	28611
c. Total benefits	2104	2104	2146	2146	2189
2. Admin. staff (b + c below)	0	0	0	0	0
a. #FTE	0	0	0	0	0
b. Total salary	0	0	0	0	0
c. Total benefits	0	0	0	0	0
3. Support staff (b + c below)	0	0	0	0	0
a. #FTE	0	0	0	0	0
b. Total salary	0	0	0	0	0
c. Total benefits	0	0	0	0	0
4. Equipment	500	500	500	500	500
5. Library	0	0	0	0	0
6. New or renovated space	0	0	0	0	0

7. Other expenses	0	0	0	0	0
TOTAL (Add 1 - 7)	30104	30104	30696	30696	31300

### M. Adequacy of provisions for evaluation of program

Consistent with college policy and assessment procedures, the CT certificate will be evaluated from program level and course level review processes. The assessment of student learning outcomes associated with the three educational CT program goals will be evaluated annually in the CT certificate program. Program effectiveness data including ARRT CT exam pass rates, graduate employment in CT, and student retention are specific measures evaluated from a program perspective. Annual graduate surveys will evaluate the program, courses, and clinical practicum components. Employer surveys will rate CT program graduates clinical knowledge and performance in the radiologic technology profession.

Courses are evaluated by analyzing student performance on formative and summative assessments. Student Opinion of Learning (SOL) course evaluations assess faculty instructional practices.

Student achievement and learning outcomes performance at Wor-Wic Community College are documented via the institution’s planning and assessment software Nuventive Improve. Program and course level assessment is conducted annually, and results and analyses are entered into the Improve system throughout the year.

### N. Consistency with the State’s Minority Student Achievement Goals

Wor-Wic Community College maintains a cultural diversity plan, which states:

“Wor-Wic Community College is committed to a plan of cultural diversity that promotes inclusivity of diverse students and employees. The college has created a welcoming atmosphere on campus and has infused cultural diversity in all college programs, services and communications. The college has demonstrated this commitment to cultural diversity through the vision, values, mission, and goals stated in the strategic plan. The strategic plan of the college is in alignment with the diversity goals of the Maryland State Plan for Higher Education, including implementation strategies and timelines for meeting the goals. The college adheres to the definition of cultural diversity as *inclusion of those racial and ethnic groups and individuals that are or have been underrepresented in higher education* [Education Article, Annotated Code of Maryland 11-406-(b) (1) (iii)].”

This plan identifies how cultural diversity and minority achievement is addressed in each of the vision, mission and values’ statements as well as long term goals and strategic initiatives.

Additionally, each year Wor-Wic produces a cultural diversity report in compliance with the Maryland Higher Education Commission reporting requirements for college cultural

diversity plans [Education Article, Annotated Code of Maryland 11-406-(b) (1) (iii)]. The report describes the set of initiatives and achievements accomplished in support of the diversity plan for each year.

### **O. Relationship of Low Productivity Programs**

N/A

### **P. Adequacy of Distance Education Programs**

Didactic courses for this program will be offered through distance education, the clinical courses will be offered face-to-face. While not currently a member of C-RAC, the College complies with each of the guidelines through appropriate policies and practices. Wor-Wic Community College is approved to offer distance education programs by Middle States Commission on Higher Education and is approved by MHEC to offer degree programs (General Studies, A.A., Chemical Dependency A.A.S. and Certificate) 100% online.